SHARP®

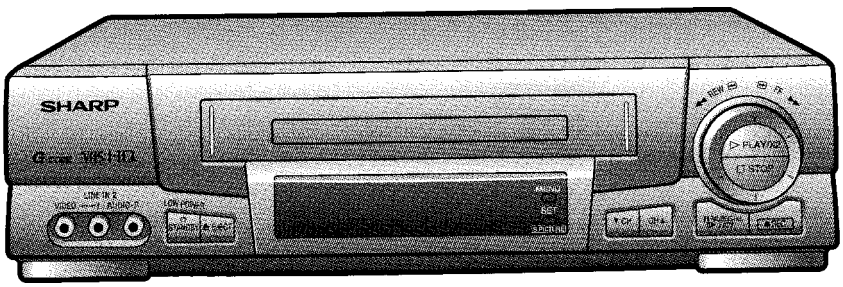
MODEL

VC-H670X
VC-H690X

VIDEO CASSETTE RECORDER
OPERATION MANUAL

Please read this operation manual carefully before using the VCR.

G-CODE®



MID&SHUTTLE

VHS HQ HIGH QUALITY
PAL

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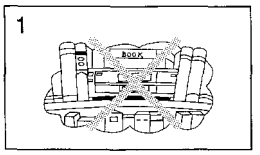
IMPORTANT SAFEGUARDS AND PRECAUTIONS

CAUTION

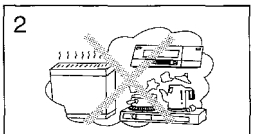
BEFORE OPERATING YOUR NEW VCR, PLEASE CAREFULLY READ THIS OPERATION MANUAL AND THEN SAVE IT FOR FUTURE REFERENCE AS IT WILL BE USEFUL IF YOU HAVE ANY PROBLEMS OPERATING YOUR VCR IN THE FUTURE.

Location and Handling

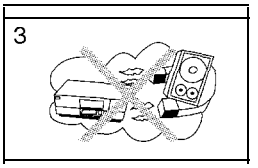
1. Air vents are provided in the VCR cabinet to prevent excessive temperatures inside the unit. Do not place your VCR in closed spaces, cover it, or otherwise block the vents.



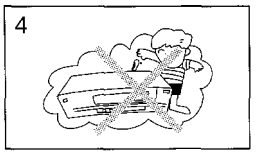
2. Do not place the VCR in direct sunlight, or near heat sources.



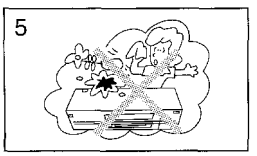
3. Keep the VCR and tapes away from strong magnetic objects



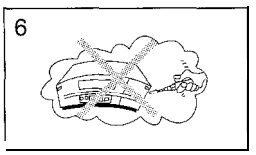
4. Do not insert or drop anything into the VCR through the air vents or cassette compartment as this could cause serious damage, possibly resulting in fire.



5. Do not place any object containing water or other liquids on the VCR. In the event that liquid should enter the cabinet, unplug the VCR immediately and contact the retailer or a service centre approved by Sharp immediately.



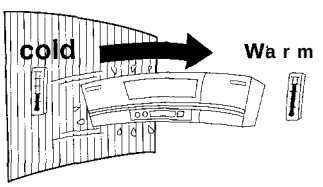
6. Do not remove the VCR cabinet. Touching parts inside the cabinet could result in electric shock and/or damage to the VCR. For service and adjustment inside the cabinet, call a qualified dealer or service centre approved by Sharp.



7. The use of head cleaning tapes is not recommended as they may cause damage to your machine.

Caution-Prevent Condensation

When moving the VCR from a cold place to a warm one, condensation (dew) is likely to form on the VCR drum and heads.
If you try to play back or record in these circumstances, the videotape and VCR may be damaged.
To prevent this, turn the power switch on and wait for a few hours for the VCR to warm up and dry before attempting playback or recording.
This is particularly important before loading a cassette for the first time after purchasing the VCR.



Service

Do not attempt to service this VCR yourself. Please carry out the user checks on page 40. If you still experience a problem, contact your dealer or nearest Sharp service facility.

Others

Copyright may exist in material you wish to record. Copying such material without permission of the relevant licensee(s) or owner(s) of the copyright is prohibited by law. SHARP is not in a position to authorize the recording of copyright works and nothing in this manual should be read or implied as giving that authority.

Features

COMMON FEATURES

- **VHS Hi-Fi Stereo Sound/IGR System / • Audio Dubbing**
- **G-CODE* * for Instant Video Programme System**
- **MID-Drive (New Centre-Mounted Mechanism)**
- **HQ (High Quality) Circuitry**
- **Multi Language On Screen Display (English, French, Spanish, Chinese)**
- **New Sharp Super Picture** — Enhances picture quality during playback.
- **OSD (On Screen Display) with Menu Screen Guidance**
- **DPSS (Digital Programme Search System)**
- **Quick Start with Full Loading Mechanism**
- **365-Day, 8-Programme Timer (Daily/Weekly Programmable)**
- **Auto Channel Tuning**
- **48-Channel Preset PLL Frequency Synthesized Tuner**
- **Built-in Shuttle Control**
- **LOW POWER feature**
- **Built-in Front AV Jacks**
- **60-minute Timer Memory Backup** -Timer settings, etc. remain in memory after power interruptions of up to 60 minutes.
- **345-times High Speed Rewinding Function** — Enhances rewinding at a speed 345 times faster than the LP mode recording/playback speed (only with an E-I 80 tape).

Only for VC-H690X

- **Virtual Dolby Surround**

* G-CODE is a trade mark of Gemstar Development Corporation The G-CODE system is manufactured under license from Gemstar Development Corporation.

VIRTUAL DOLBY SURROUND

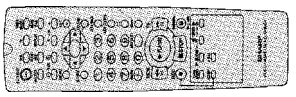
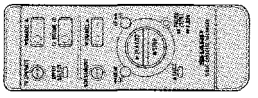
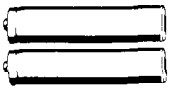
Manufactured under license from Dolby Laboratones. Dolby and the double-D symbol are trademarks of Dolby Laboratories

POWER SUPPLY:
The voltage supply of this VCR is AC 240 V, 50 Hz.

CASSETTE TAPE:
This VCR uses VHS standard video signals. Use only video cassette tapes that carry the VHS mark.

Accessories

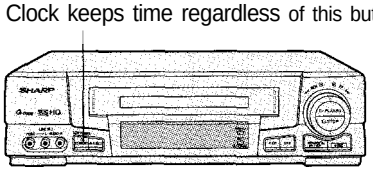
Be sure that the following accessories are all included with your VCR

	Remote control unit		
	VC-H670X	VC-H690X	
Coaxial cable (TV-VCR cable)			 Two (R6 UM/SUM-3 or AA) batteries for the remote control unit

LOW POWER Feature

This model is equipped with a LOW POWER feature to save energy when the VCR is not in use

STANDBY/LOW POWER button
Clock keeps time regardless of this button



This VCR is not equipped with a mains power switch. Accordingly, nominal current to drive the clock is drawn at all times when the AC power cord is plugged into a wall socket. If the VCR is not to be used for an extended period, be sure to unplug the cord.

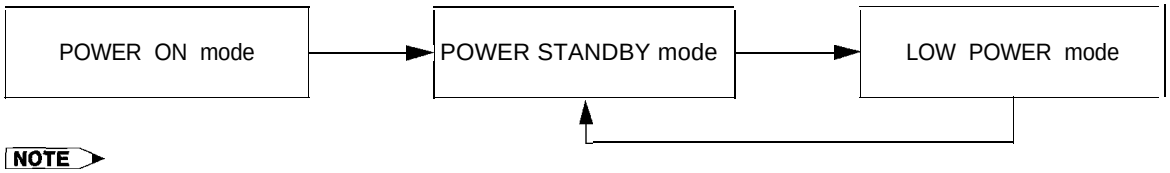
1. Definitions of POWER modes

POWER ON mode	• VCR in operation or ready for operation. • VCR display is on.
POWER STANDBY mode	• VCR in standby mode. • VCR display is on.
LOW POWER mode	• VCR display is off, but clock continues to keep time. . Noise may appear on the screen when watching TV in this mode. If this occurs, switch to POWER STANDBY mode. • This mode cannot be used when the programmable timer is set to TIMER ON.

2. In POWER ON mode

Each time STANDBY/LOW POWER on the VCR or the remote control (VCR STANDBY for VC-H690X, STANDBY for VC-H670X) is pressed, the POWER MODE changes as shown below.

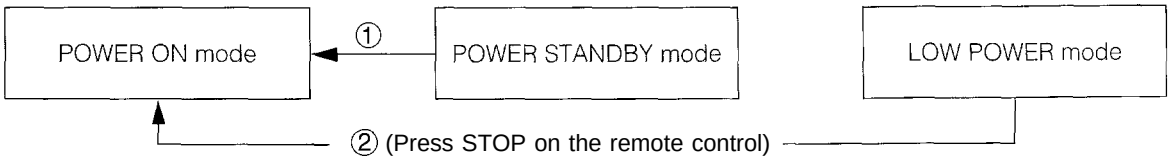
(Current)



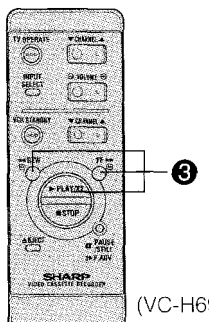
NOTE

• LOW POWER mode cannot be used when the programmable timer is set to TIMER ON.

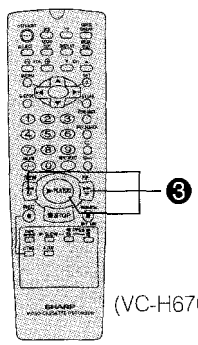
3. Switching from POWER STANDBY or LOW POWER mode to POWER ON mode.



❶ Press STOP on the VCR or the remote control to switch from POWER STANDBY mode to POWER ON mode.
❷ Press STOP on the remote control to switch from LOW POWER mode to POWER ON mode.
❸ By pressing one of the tape operation buttons on the remote control (PLAY, REW, FF, etc.) with a video tape in the VCR, the mode will automatically switch to POWER ON and the tape operation will begin.



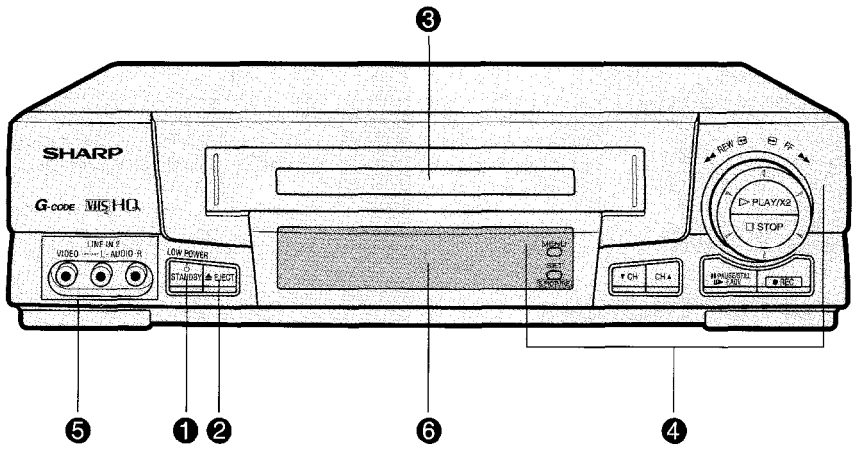
(VC-H690X)



(VC-H670X)

Major Components of Your VCR

Front



❶ **STANDBY/LOW POWER** button (See page 5.)
❷ **EJECT** button
❸ Cassette compartment **(See Playback, Recording.)**
❹ Basic function controls **(See Playback, Recording.)**
Channel tuning controls **(See Setting the Channels.)**
❺ Front AV jack (LINE IN 2: VIDEO, AUDIO-L/R)
❻ VCR Display (explained throughout the operation instructions)

NOTE

- When the VCR is in "POWER ON" mode, this Indicator (Where a channel position number is usually displayed) will light up. When the "POWER STANDBY" mode, "LOW POWER" mode, this part will not be lit

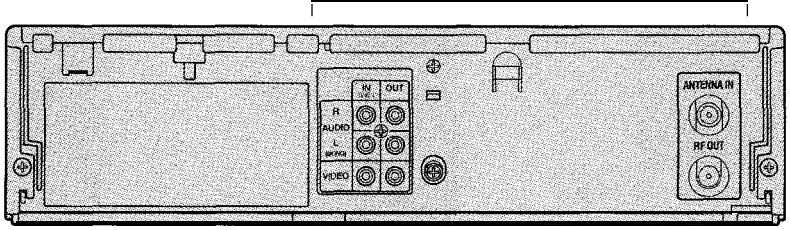
	Cassette-In Indicator	SLOW	Slow	L R	Audio Output mode
PLAY	Play/Double speed playback	● REC	Record (When operating mode is displayed)	VSR	Video Search Rewind
REW	Rewind	● PAUSE	Rec Pause	VSF	Video Search Forward
FF	Fast Forward	STOP	Stop		New Child-Proof lock
STILL	Still/ Frame Advance		Recording with the timer/ Simple Recording timer		
SHARP	When AC power cord is first plugged in.		Recording mark		

NOTE

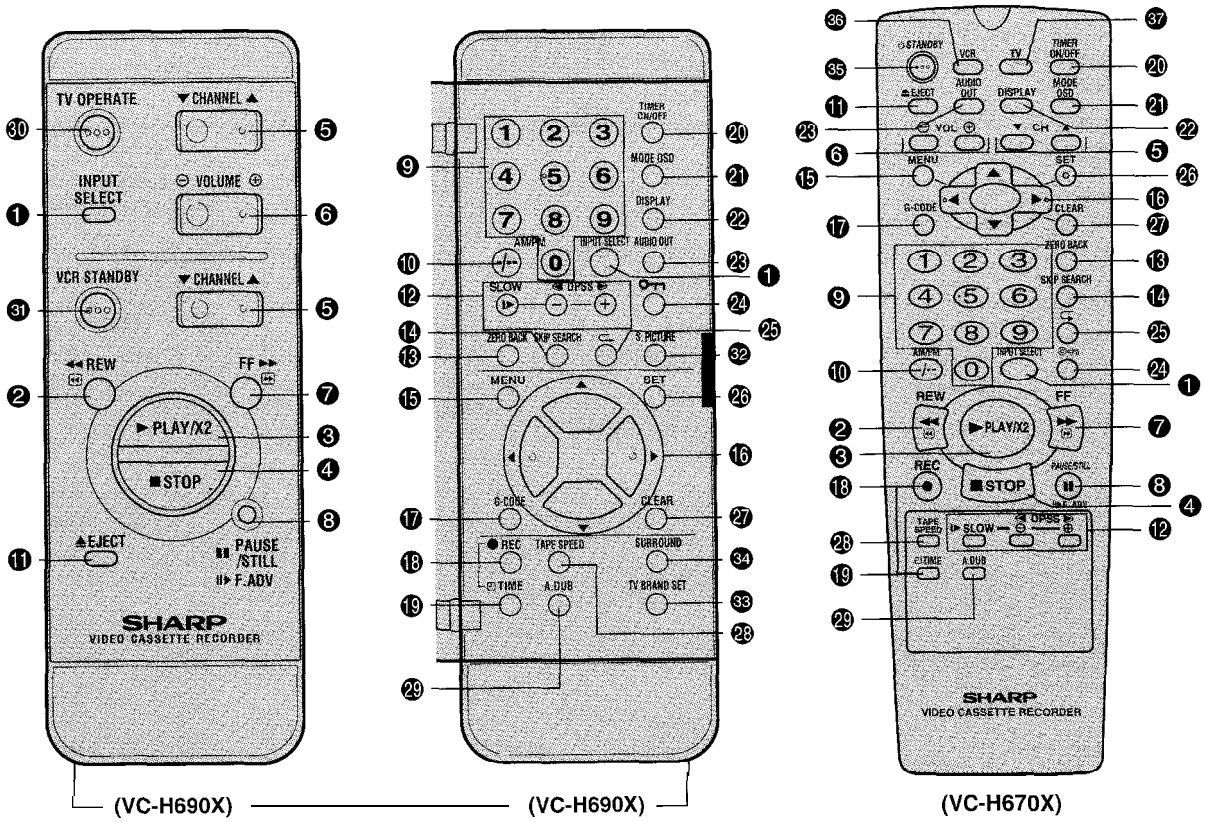
*The display changes each time **DISPLAY** on the remote control is pressed. (See page 37.)

Rear

Connection terminals (See **Connections** on page 9)



Remote Control



1. INPUT SELECT button
2. REW button
3. PLAY/x 2 button
4. STOP button
5. CHANNEL (CH) ▲/ ▼ button
6. VOLUME (VOL) ⊕/⊖ button
7. FF button
8. PAUSE/STILL, F. ADV button
9. Numeric buttons
10. AM/PM button
    Digit select (When inputting up to two digit numbers)
11. EJECT button
12. SLOW/⊕/⊖ buttons (SLOW ⊕/⊖, DPSS ▶/◀)
13. ZERO BACK button
14. SKIP SEARCH button
15. MENU button
16. ◀/▶/▲/▼ button
17. G-CODE button
18. REC button
19. TIME button
20. TIMER ON/OFF button
21. MODE OSD button
22. DISPLAY button
23. AUDIO OUT button
24. ⚿ button
    (New Child-proof Lock)
25. REVIEW SEARCH button
26. SET button
27. CLEAR button
28. TAPE SPEED button
29. A. DUB button

Only for VC-H690X

30. TV OPERATE button
31. VCR STANDBY button
32. S. PICTURE button
33. TV BRAND SET button
34. SURROUND button

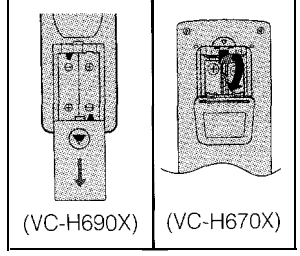
Only for VC-H670X

35. STANDBY button
36. VCR button
37. TV button

Inserting the Batteries

First, install the batteries properly. Fit two R6 (UM/SUM-3, AA) 1.5 volt batteries (included) or equivalent, If the remote control stops working, insert new batteries.

Ensure the batteries are inserted correctly, matching the polarities (+/−) indicated in the remote control.



NOTE

- Do not subject the remote control to shock, water or excessive humidity.
- The remote control may not function if the VCR sensor is in direct sunlight or any other strong light.
- Incorrect use of batteries may cause them to leak or burst. Read the battery warnings and use the batteries properly
- Do not mix old and new batteries, or mix brands in use.
- Remove the batteries if you will not use the remote control for an extended period of time

Using the Remote Control for TV Operation

The provided remote control can operate the basic functions of your television. In addition to most Sharp televisions, other manufacturers' televisions listed below can also be controlled by setting the remote control to the corresponding TV brand. The remote control's default brand is "SHARP", which enables control of most Sharp televisions. When you replace the batteries in the remote control, the control's TV brand setting will be reset to SHARP.

Setting the TV Brand

❶ Turn on your TV.

❷ From the table below select the button which corresponds with the brand of your TV. Simultaneously press both this button and (*) **STANDBY/TV BRAND SET.** Hold down for more than one second.
When setting is complete, the remote control will send a "power off" signal (⏻) to the TV, and it should turn off.

NOTE

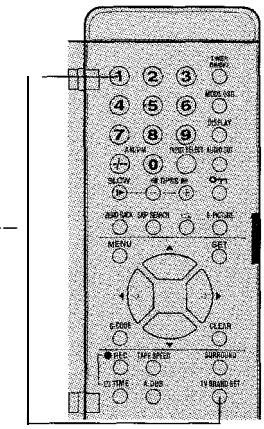
- If the TV does not turn off in step ❷, repeat the step ❷ setting procedure and select the button for a different brand.

TV BRAND NAME	Corresponding button	TV BRAND NAME	Corresponding button
SHARP	1	GRAETZ	7
PHILIPS	2	LUXOR	7
THOMSON	3 or 4	SALORA	7
TELEFUNKEN	3 or 4	SELECO	7
NORDMEND	3 or 4	SONY	8
BRANDT	3 or 4	TOSHIBA	9
SABA	3 or 4	PANASONIC	0 or -/--
TELAVIA	3 or 4	SANYO	VC-H690X: MODE OSD; VC-H670X: ⊖VOL
GRUNDIG	5	HITACHI	INPUT SELECT / INPUT SELECT
BLAUPUNKT	5	MITSUBISHI	DISPLAY / ▼CH
FERGUSON	6	JVC	AUDIO OUT / CH▲
ITT NOKIA	7		

*** STANDBY** for VC-H670X
TV BRAND SET for VC-H690X

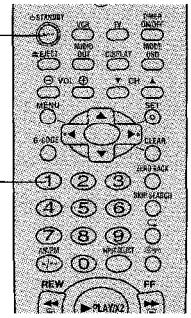
(For example)
TV brand: SHARP
(Corresponding button is "1 ")

Press these buttons simultaneously and hold for more than 1 second.



(VC-H690X)

Press these buttons simultaneously and hold for more than 1 second.



(VC-H670X)

TV Functions to be Controlled (Only for VC-H670X)

Switch **to TV** control **mode.**
• Press **TV** to select the TV control mode.

⟷

Return to VCR control mode.
• Press **VCR** to select the VCR control mode.

TV function control

❶ **Press TV to select the** TV control mode.

❷ Use the following buttons on your remote control to operate your TV set.

TV function
- TV POWER (⏻)
- 'TV CHANNEL UP/DOWN
- TV VOLUME UP/DOWN
- INPUT SELECT button (TV-AV selector)

❸ Press **VCR** to return to the VCR control mode.

(Only for VC-H690X)
- You can operate TV POWER (⏻), TV CHANNEL UP/DOWN, TV VOLUME UP/DOWN, INPUT SELECT (TV-AV selector) directly.

NOTE

- When you replace the batteries in the remote control, if your television is not a Sharp model you must reset the TV brand.
- If **MENU, PLAY, STOP, FF** or **REW** are pressed in the TV control mode, the VCR will return to VCR control mode.

IMPORTANT NOTE:

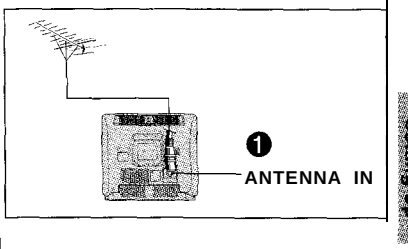
Although the provided remote control unit is compatible with most SHARP televisions, as well as many TV models manufactured by others, it is possible that the provided remote control will not work with your TV, or will control only some of the functions
If the button listed in the table does not work with your TV set, you may want to try another, occasionally, models vary within a brand.

Consequently, Sharp's warranty does not cover all of the models under the brands listed in the table.

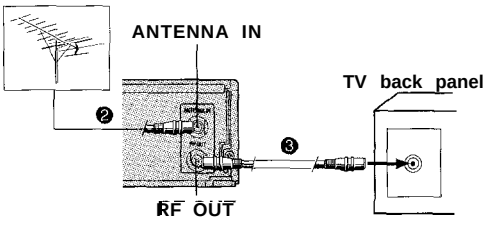
Connections

❶ Disconnecting TV Cable
Disconnect the aerial cable from the back of your TV set.

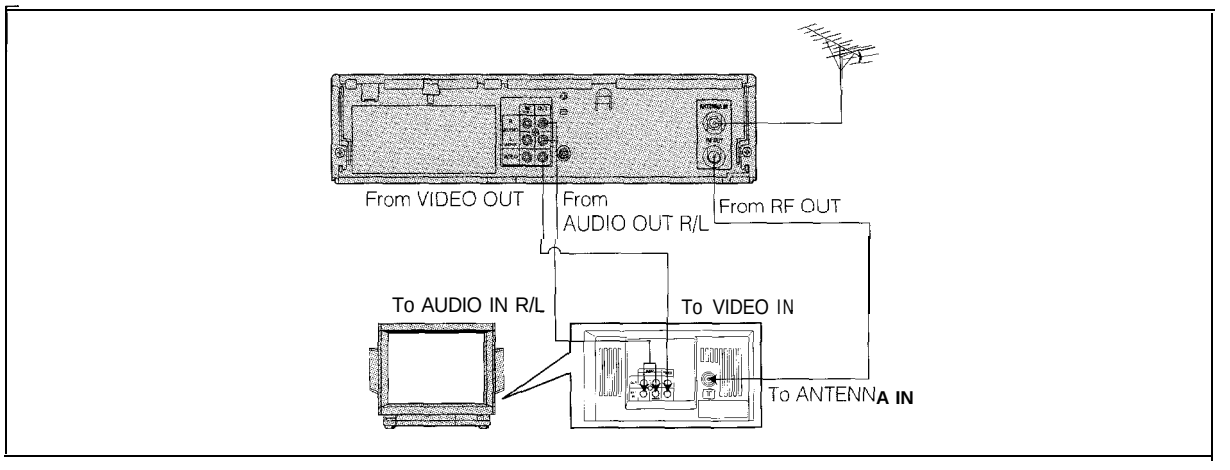
❷ Connecting Aerial Cable to VCR
Connect the aerial cable to the **ANTENNA** IN terminal of your VCR.



❸ Connecting VCR to TV
Connect the supplied coaxial cable to the **RF OUT** terminal of the VCR. Plug the other end into your TV's **ANTENNA** IN terminal.



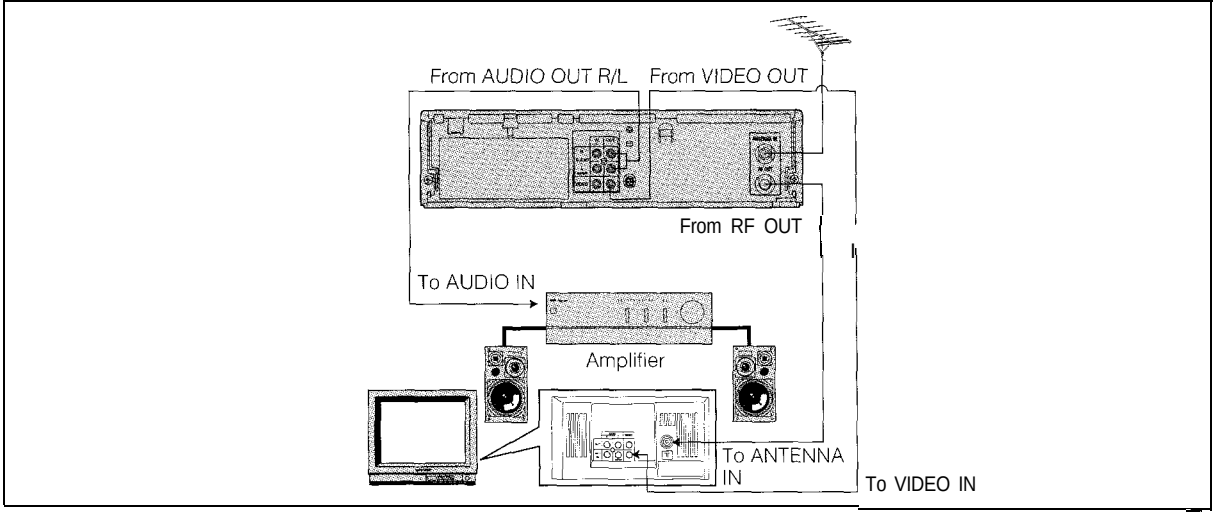
Connecting to a Stereo TV



NOTE

- Stereo sound output is only possible using the AUDIO OUT terminals. Sound from the radio frequency converter (RF OUT) is mono only.
- The power cord should not be plugged into the power outlet until the above connections have been completed.
- If TV reception is weak, use a TV signal booster (not supplied)

Connecting to TV and Audio Equipment



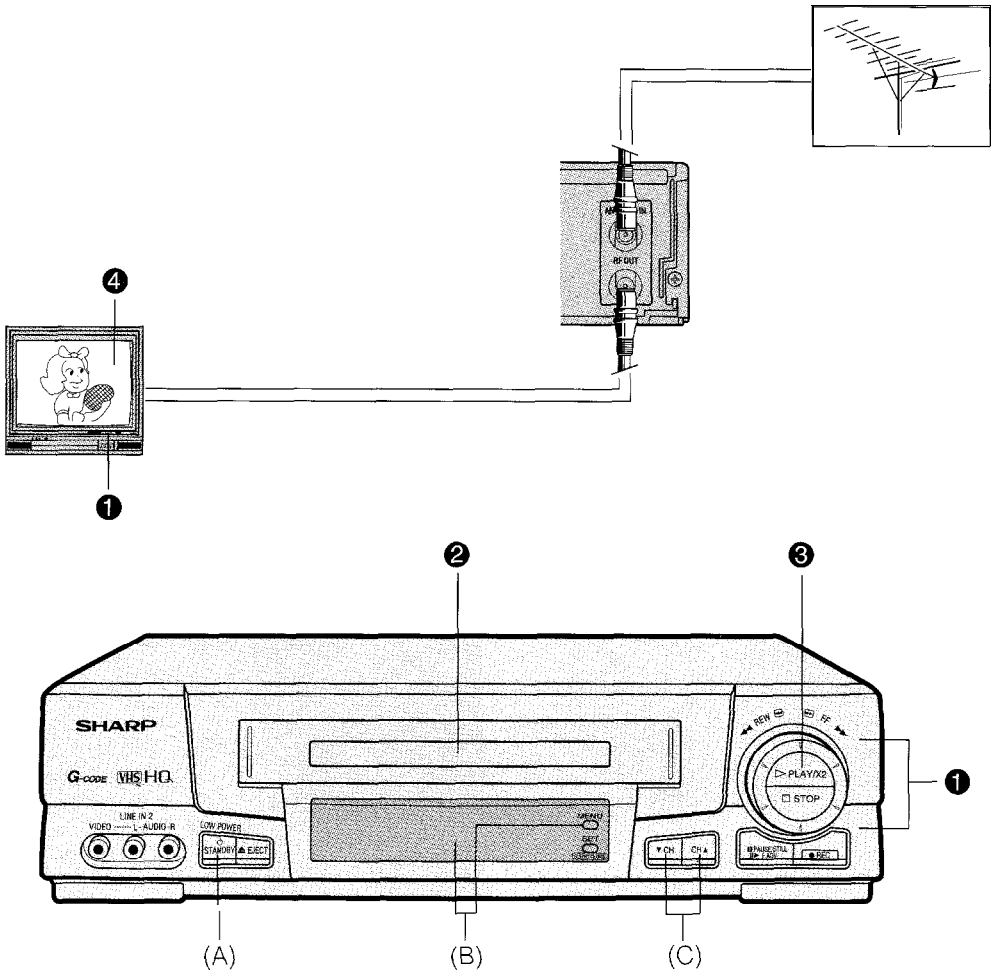
Adjusting the Video Channel

To view the output of your VCR on the television screen, you must select an unused channel on your TV and tune it to the output of your VCR (factory preset to UHF channel 37).

❶ Turn on the TV, select the AV channel or an unused channel on the TV, and turn on the power on the VCR. (See page 5, item 3.)
❷ Load a prerecorded tape into the VCR (not supplied).
❸ If the erasure protection tab on the tape is removed, the VCR will automatically play back the tape. Otherwise press **PLAY/x 2.**
❹ Tune the selected channel on the TV until the picture from the VCR is displayed on the TV screen. (This TV channel must be selected each time the VCR is used.)

• If picture interference appears on the TV screen in step ❹ above, you can change the video channel (RF output channel from the VCR) with the following procedure. (If UHF channel 37 is an active broadcast channel in your area, manually select a different channel (UHF 28 to UHF 69) (see below) and then retune your TV as above.)

(A) Press **STANDBY (LOW POWER)** on the VCR, or **VCR STANDBY** (for VC-H690X) or **STANDBY** (for VC-H670X) on the remote control. The VCR enters POWER STANDBY mode. (See page 5, item 2.)
(B) Keep pressing **MENU** for more than two seconds to light up the [H3 TRF on the VCR display. ("VCR" is displayed above [H3 TRF.)
(C) Press CH▼/CH▲ on the VCR or ▲/▼ button of ·:· on the remote control to manually select an unused channel for use as the video channel, then press **SET**.
(D) Repeat steps ❶ to ❹ above using the newly selected video channel.



Setting the Language

PREPARATION

- Select the video channel on your TV. And turn power ON the VCR. (See page 5, item 3.)

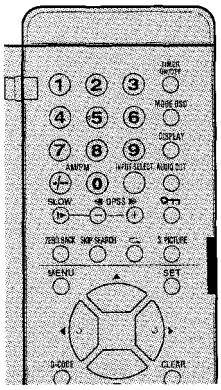
NOTE

- If the power has been disconnected, it will be necessary to set the language and clock again

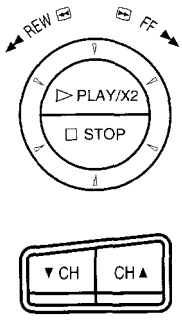
NOTE

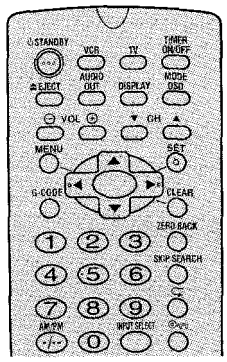
*While in MENU, the ▲/▼/◀/▶ buttons on the remote control operates the following functions (same functions on the VCR):

▲ → CH ▲
▼ → ▼ CH
◀ → REW (Shuttle Ring)
▶ → FF (Shuttle Ring)



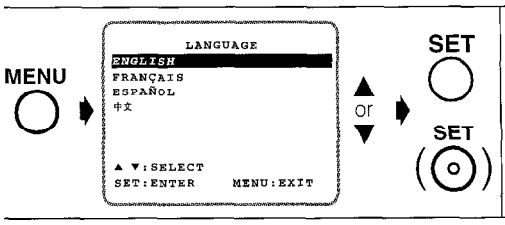
(VC-H690X)





(VC-H670X)

Initial Setting of Language



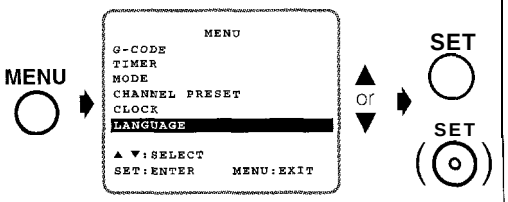
❶ Press **MENU**.
Select the language with ▲/▼ and press **SET**.
Ex.: ENGLISH

NOTE

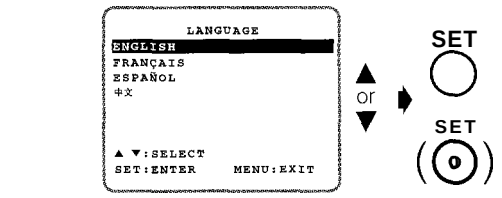
- Refer to page 12 to set the clock.

Changing Language

- If the language has already been set previously and you want to change it, follow the steps below.



❶ Press **MENU.**
Select item "LANGUAGE" with ▲/▼ and press **SET.**



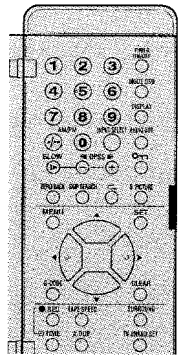
❷ Select the language with ▲/▼ and press **SET.**
Ex. : ENGLISH

Setting the Clock

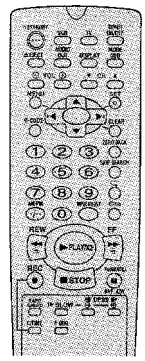
When you use the VCR for the first time or after a power failure of more than 60 minutes the clock will be reset. Apply power to the unit to power on (see page 5, item 3) and press **MENU,** Then perform the following procedure.

PREPARATION

- Select the video channel on your TV.
  And turn on the VCR. (See page 5, item 3.)



(VC-H690X)



(VC-H670X)

Initial Setting of Clock

❶ First set the language (refer to page 11). Then press **SET,**

▲ or ▼

```
CLOCK
MODE  TIME     DATE  YEAR
12H   12:00AM  1/01  00

MODE:24H/12H
◄ ►:SELECT   ▲ ▼ :CHANGE
SET:ENTER    MENU:EXIT
```

▲ ▼ ►

❷ Select whether the clock should show 12-hour AM/PM time or 24-hour time by pressing ▲/▼, and then press ►.
Ex.: 12H

NOTE

- "24H" ..... 24-hour display.
- "12H" ..... 12-hour AM/PM display.
- 12H (AM/PM) mode is preset at the factory.

Numeric buttons or ▲/▼

```
CLOCK
MODE  TIME     DATE  YEAR
12H   10:28AM  1/01  00

◄ ►:SELECT   ▲ ▼ :CHANGE
SET:ENTER    MENU:EXIT
```

▲ ▼ ►

❸ Set the present time with the numeric buttons or ▲/▼ on the remote control and then press ►. (First set the 'hour' digits and then the 'minute'. If there is only one 'hour' or one 'minute' digit, enter a 0 first.)
Set AM or PM, using **AM/PM**. (12 hour)
Ex.: 10:28AM

NOTE

- If 12H mode was selected, then set the AM/PM indicator.

Numeric buttons or ▲/▼

```
CLOCK
MODE  TIME     DATE  YEAR
12H   10:28AM  15/12 00

DATE :DAY/MONTH
```

▲ ▼ ►

❹ Set the date with the numeric buttons or ▲/▼ on the remote control, and then press . . (First set the 'day' digits and then the 'month'. If there is only one 'day' or one 'month' digit, enter a 0 first.)
Ex.: Dec. 15 (15/12)

Numeric buttons or ▲/▼

```
CLOCK
MODE  TIME     DATE  YEAR
12H   10:28AM  15/12 98
```

❺ Set the year digits with the numeric buttons or ▲/▼ on the remote control. (Enter the last two digits of the year.)
Ex.: 98

SET **SET** ◉ **Normal Screen**

❻ Press **SET**.

Changing the Clock Setting

MENU ◉ ►

```
MENU
G-CODE
TIMER
MODE
CHANNEL PRESET
CLOCK
LANGUAGE

▲ ▼:SELECT
SET:ENTER    MENU:EXIT
```

▲ or ▼ ► **SET** ◉

❶ Press **MENU**.
Select item "CLOCK" with ▲/▼ and press **SET**.
❷-❺ Follow steps ❷ through ❺ above and step ❻ below.

SET **SET** ◉ **MENU** ◉

❻ Press **SET**. To return to the normal screen, press **MENU**.

Setting the Channels

Your VCR can receive VHF channels 0 to 12, and UHF channels 28 to 69. Your VCR has 48 programmable channel positions, each of which can be set to any of the above broadcast channels. The channel positions have been preset at the factory as shown below.

Position	Preset TV Channel	Position	Preset TV Channel
0		8	Skipped channel
1	Skipped channel	9	VHF 9
2	VHF2	10	VHF 10
3	Skipped channel	11-27	Skipped channel
4	Skipped channel	28	UHF28
5	VHF 5A	29-46	Skipped channels
6	VHF 6		
7	VHF 7	47	

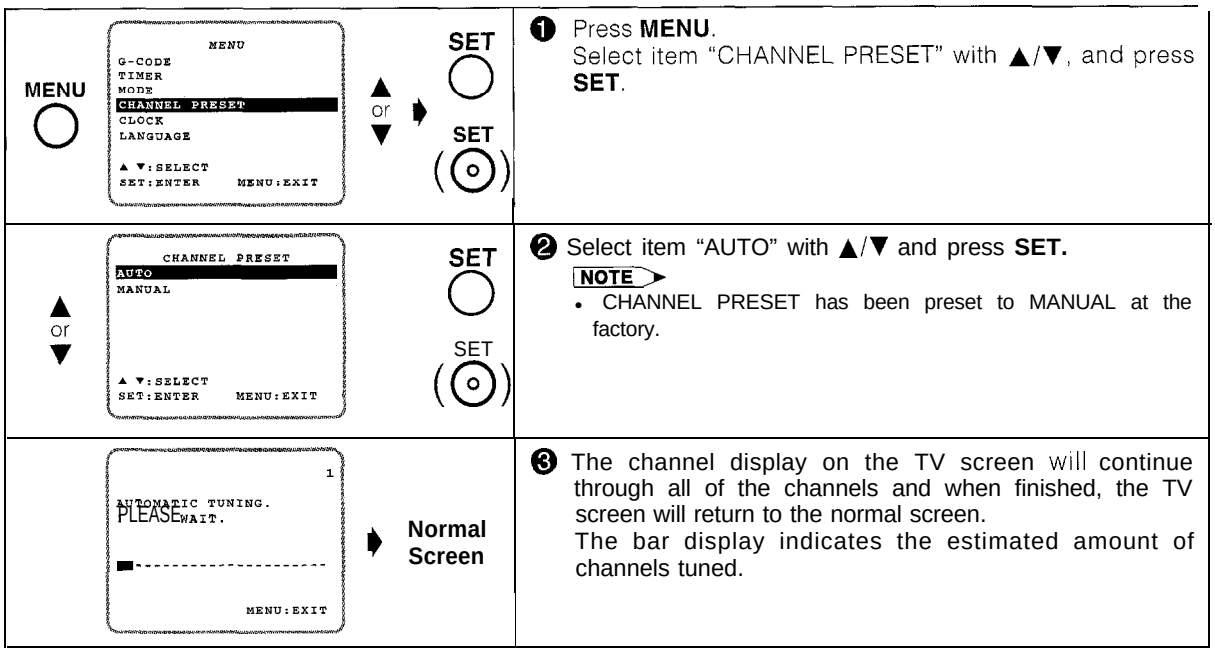
NOTE

- Use the ▲ / ▼ / ◀ / ▶ buttons on the remote control to set the OSD.
- Channel position numbers 1, 3, 4, 8, 11 to 27, and 29 to 46 have been factory set to be skipped when CHANNEL ▲ or ▼ (CH ▲ or ▼)is used.
- If the picture is not clear, if you want a different channel from the one preset or if you wish to reset a skipped channel, reset the channel as follows.

AUTO TUNING

PREPARATION

- Select the video channel on your TV. And turn on the VCR. (See page 5, item 3.)



❶ Press **MENU**.
Select item "CHANNEL PRESET" with ▲/▼, and press **SET**.

❷ Select item "AUTO" with ▲/▼ and press **SET.**

NOTE

- CHANNEL PRESET has been preset to MANUAL at the factory.

❸ The channel display on the TV screen will continue through all of the channels and when finished, the TV screen will return to the normal screen.
The bar display indicates the estimated amount of channels tuned.

NOTE

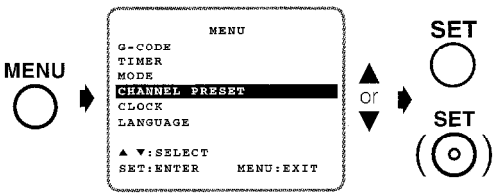
- If additional unwanted channels were found, refer to page 15 to skip unwanted channels.
- If some channels were unable to be found, refer to page 14 for Manual Tuning.

MANUAL TUNING

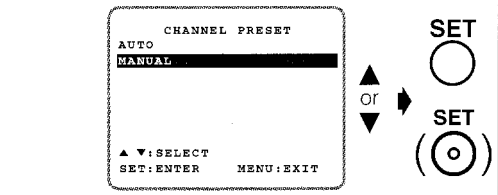
PREPARATION

- Select the video channel on your TV. And turn on the VCR. (See page 5, item 3.)

Example: Tuning Channel Position 3 to Broadcast TV Channel 7



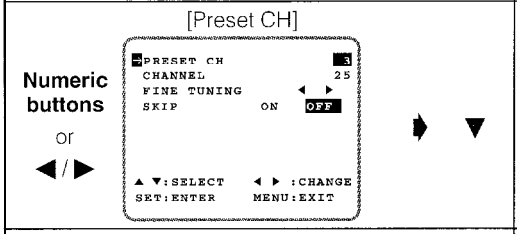
❶ Press **MENU**.
Select item "CHANNEL PRESET" with ▲/▼ and press **SET**.



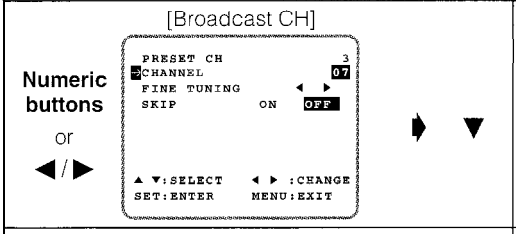
❷ Select item "MANUAL" with ▲ or ▼ and press **SET**.

NOTE

- CHANNEL PRESET has been preset to MANUAL at the factory.



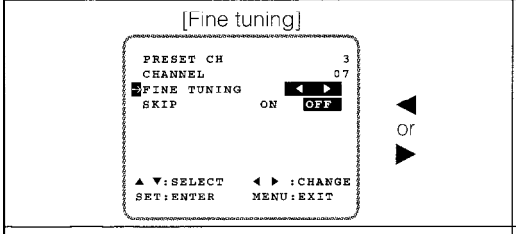
❸ Select the preset channel position number with the numeric buttons or ◀/▶ and then press ▼.



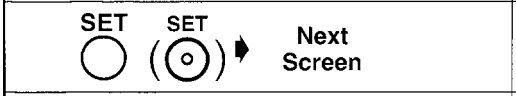
❹ Press the numeric buttons or ◀/▶ until you see the desired broadcast channel on your TV, and then press ▼.

NOTE

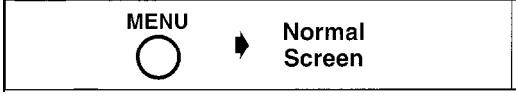
- When Digit select is set to two digit input, and the channel number is only one digit, enter "0" first.



❺ For fine tuning, press ◀ or ▶ until the broadcast channel comes in clearly on your TV.



❻ Press **SET**. If you wish to preset more channels, repeat steps ❸ through ❺.



❼ To return to the normal screen, press **MENU**.

NOTE

- Numeric buttons on the remote control can also be used to select channel numbers. Press %-to switch between one and two digit numbers for step ❸.

Channel Skip/Cancelling Skip

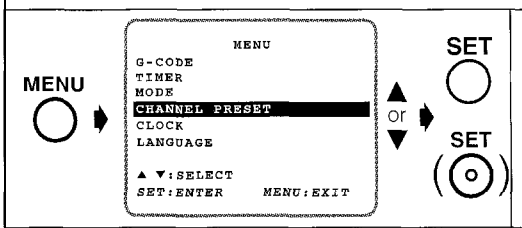
Channel skip

If there are channel positions that are not preset. you can skip them with the following procedure.

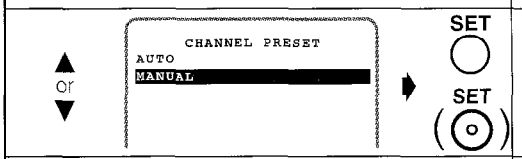
PREPARATION

- Select the video channel on your TV And turn on the VCR. (See page 5, item 3.)

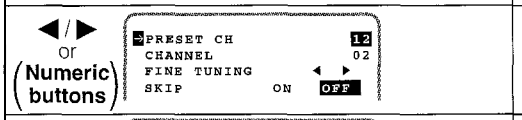
Example: Skip channel position 12.



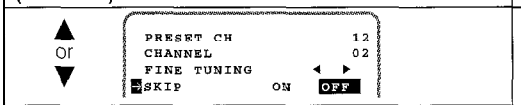
❶ Press **MENU**. The MENU screen will appear. Select item "CHANNEL PRESET" with ▲/▼ and press **SET**.



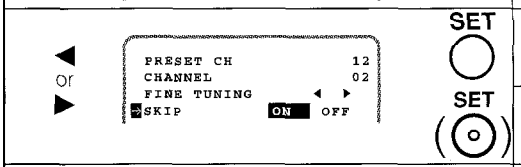
❷ Select item "MANUAL" with ▲/▼ and press **SET**.



❸ Set the channel position you wish to skip with ◀/▶ (or numeric) buttons.
Ex.: 12

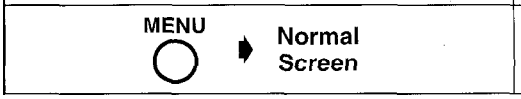


❹ Select SKIP setting mode with ▲ or ▼.



❺ Press ◀ or ▶ to se ect SKIP ON and press **SET**.

❻ If you wish to set more channels to be skipped, repeat steps ❸ through ❺.



❼ To return to the normal screen, press **MENU**.

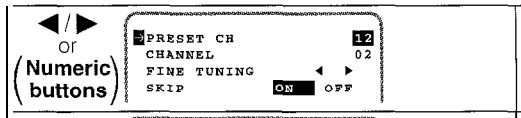
Cancelling skip

PREPARATION

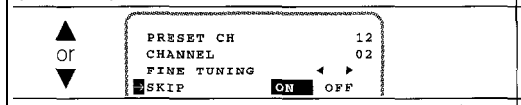
- Select the video channel on your TV. And turn on the VCR. (See page 5, item 3.)

Example: Reset channel position 12.

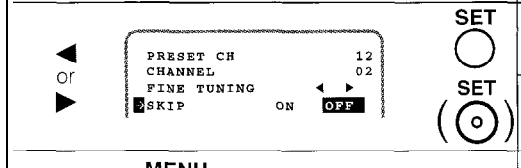
- Follow the same procedures ❶, ❷ in **Channel skip,** and then the procedures ❸–❼ below



❸ Select the channel position you wish to unskip with the numeric or ◀/▶ buttons.
Ex: 12

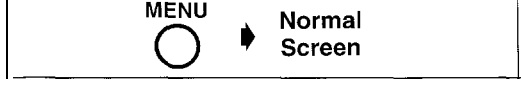


❹ Select SKIP setting mode by pressing ▲ or ▼.



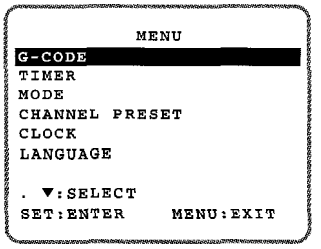
❺ Press ◀ or ▶ to select SKIP OFF and press **SET**.

❻ If you wish to unskip more channels, repeat steps ❸ through ❺.



❼ To return to the normal screen, press **MENU**.

Menu Screen



❶ Turn on your TV and select the video channel.
❷ Turn on the VCR. (See page 5, item 3.)
❸ Press **MENU** to display the MENU screen.
❹ Select the item you want by pressing ▲ or ▼ on the remote control. Refer to the pages listed below for details on each item.

The following 6 items can be set by using the On Screen Display (OSD).

1: G-CODE Setting a G-CODE timer recording. (See page 26.)
2: TIMER Setting a timer recording (and checking it), (See page 28 for the setting procedure.)
3: MODE VCR operating conditions are set according to the broadcast reception and tape playback conditions. (See page 17.)
4: CHANNEL PRESET Setting the channels. (See page 13.)
5: CLOCK Setting the present time. (See page 12.)
6: LANGUAGE Selection of language to be used for the On Screen Display. (See page 11.)

❺ Press **SET.** The screen changes to the item which you have selected.
❻ To cancel the MENU screen, press **MENU.**

NOTE

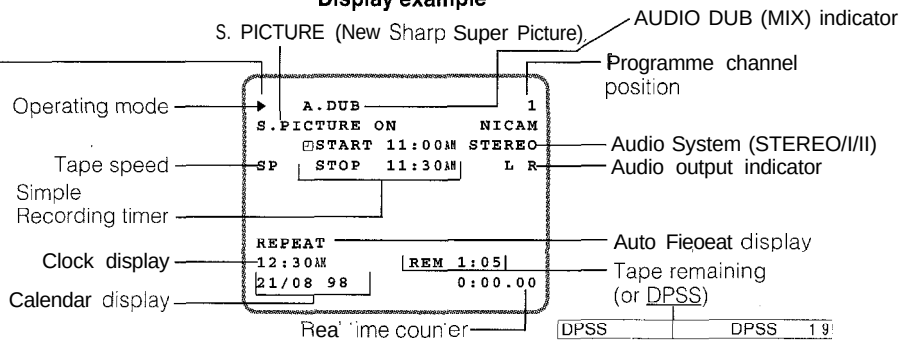
- During recording, the background colour of the MENU screen will become lighter. This does not indicate a malfunction.

OSD (On Screen Display)

The tape counter and VCR mode can be shown on the screen while you are playing back a tape or watching a broadcast on the video channel.

▶	PLAY, X2
▶▶	VSF, FF
◀◀	VSR, REW
■	STOP, CASSETTE IN
▮▮▶	F. ADV
▮▮ ▶	SLOW
▮▮	STILL
●	REC
●	II REC PAUSE

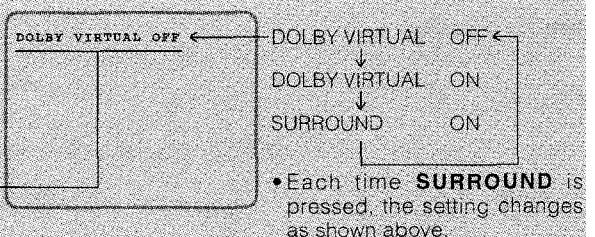
Display example



Only for VC-H690X

- When **SURROUND** is pressed on the remote control during the on-screen display, the screen on the right appears. (Ex. When DOLBY VIRTUAL OFF is set.) If **SURROUND** is not pressed for three seconds, the picture returns to the above on-screen display.

The on-screen display indicates the current DOLBY VIRTUAL mode/SURROUND mode.


DOLBY VIRTUAL OFF
DOLBY VIRTUAL OFF
DOLBY VIRTUAL ON
SURROUND ON
• Each time SURROUND is pressed, the setting changes as shown above.

NOTE

- If the clock is not set, the time and date will not be displayed.

How to Display Indicators

❶ Turn on your TV and select the video channel.
❷ Turn on the VCR. Mode indicators are displayed in the AUTO display screen.
❸ Each time **MODE OSD** is pressed, the screen changes as follows:

❶ **AUTO Display** → ❷ **FULL Display** → ❸ **COUNTER Display** → ❹ **Display off**

AUTO Display

When an each of the operation buttons, numeric button, or **CHANNEL ▲/▼ (CH ▲/▼)** is pressed, the current mode or the number of the channel will be displayed in the upper section of the TV screen for about 3 seconds.

NOTE

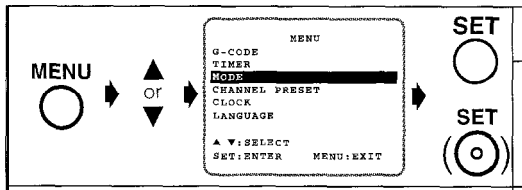
- When you record a video signal output from this VCR on another VCR, press MODE OSD to select Display Off. (If the mode indicator is displayed on the screen, it is also recorded on the tape)

Mode Selection

You can set the basic functions listed in the table below on the MODE selection screen.

PREPARATION

*Turn on your TV and select the video channel. And turn on the VCR. (See page 5, item 3.)



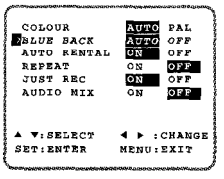
❶ Press **MENU**.

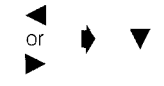
❷ Select the MODE selection mode with ▲/▼, and then press **SET**.

[Colour]

❸ Select the COLOUR mode by pressing ◀/▶, and then press ▼.
(For details, see **Colour Mode** on page 20.)
AUTO Usually select AUTO mode.
PAL Strict PAL colour mode.

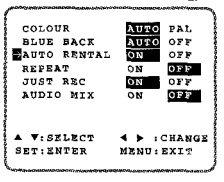
[Blue Back]





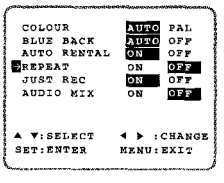
❹ Select the BLUE BACK mode by pressing ◀/▶, and then press ▼.
AUTO ..... Usually select AUTO.
A blue screen will appear when your VCR receives no TV signal or an unrecorded tape is played back.
OFF ..... Select OFF if the screen turns blue due to weak TV signal reception, or playback of a poorly recorded tape.

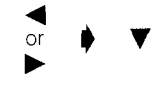
[Auto Rental]



❺ Select the AUTO RENTAL mode by pressing ◀/▶, and then press ▼.
(For details, see **Auto Rental Mode** on page 21.)

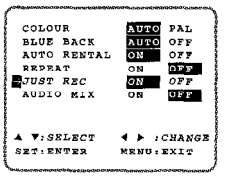
[Repeat]

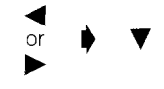




❻ Select the REPEAT mode by pressing ◀/▶, and then press ▼.
(For details, **see Auto Repeat** on page 35.)

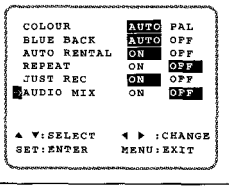
[Just REC]



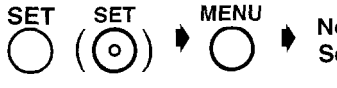


❼ Select the JUST REC mode by pressing ◀/▶, and then press ▼.
(For details, see **Intelligent Timer Recording (JUST REC)** on page 31.)

[Audio Mix]



❽ Select the AUDIO MIX mode by pressing ◀/▶, and then press ▼.
(For details, see pages 31 and 32.)



❾ Press **SET**. To return to the normal screen, press **MENU**.

Playback

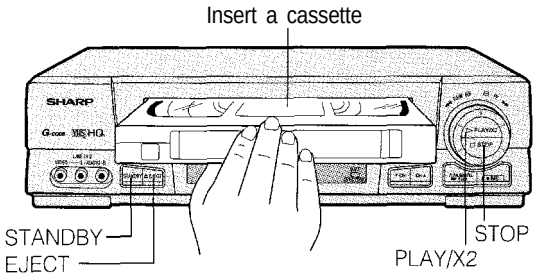
Inserting a Video Cassette

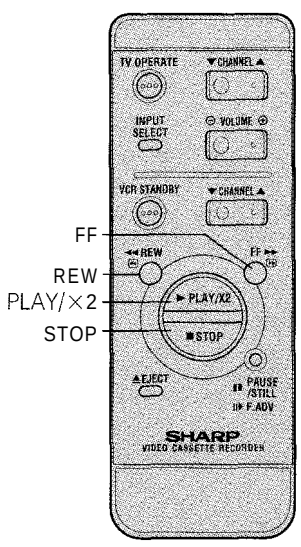
Gently insert the video cassette into the cassette compartment. The VCR turns on automatically. If the cassette is inserted Incorrectly, the loading system will not function. Do not force the cassette into the VCR. When the cassette has been properly loaded, "[ ]" appears on the VCR display.
To remove the cassette, press **EJECT** during stop mode.

Playback

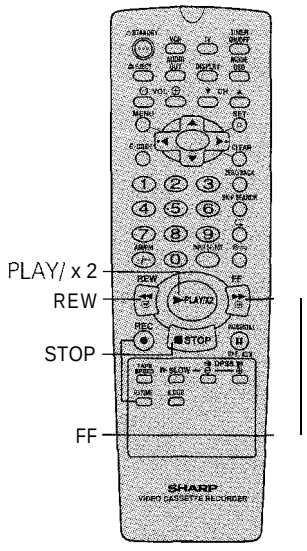
PREPARATION

*Turn on your TV and select the video channel





(VC-H690X)



(VC-H670X)

❶ Turn on the VCR. (See page 5, item 3.)
❷ Insert a cassette.
❸ Press **PLAY/×2**. (The auto tracking control system engages and "▶" flashes on the TV screen for a few seconds.)
❹ To stop playback, press **STOP.** (If the tape reaches its end, the VCR will automatically rewind the tape to the beginning, eject the cassette, and turn into POWER STANDBY mode.)

Video Search

Use the following procedure to quickly find the section you want, while viewing the picture.

❶ During playback, press **FF** for forward video search, or **REW** for reverse search.

	VSFNSR (①)	VSFNSR (②)
SP/LP	x 7	x 3

There are 2 search speeds in each direction. The VCR switches between them each time the button is pressed.
❷ Press **PLAY/X2** to resume normal playback.

NOTE

- During video search of a tape recorded in the LP mode, the upper part of the picture may be skewed to one side.

Fast Forwarding and Rewinding

❶ To move through the cassette faster, press **STOP** and then press **FF** or **REW** to fast forward or rewind the cassette. (The picture cannot be viewed in this mode.)
❷ Press **STOP** to stop fast forward or rewind.

NOTE

- If you use other than E-90/E-180 cassettes, fast forward and rewind may take somewhat longer.

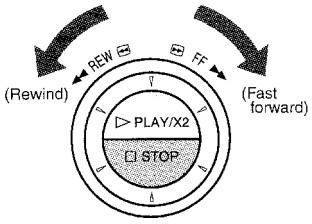
Shuttle System

The shuttle system lets you control all the basic playback functions using just the shuttle ring part

NOTE

- The shuttle ring does not rotate 360".

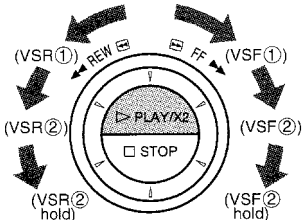
DURING STOP MODE



Fast Forward and Rewind

1. Turn the ring either to the right or the left and release it. (The shuttle ring will return to centre.)
2. Press **STOP** to stop fast forward or rewind.

DURING PLAY MODE



Video Search

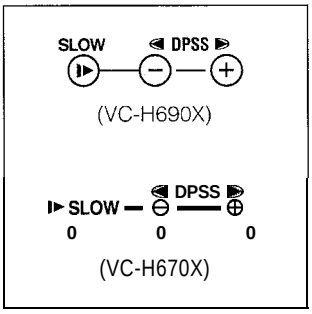
*Turn the ring to the left or the right during playback to enter VSF (Video Search Forward), or VSR (Video Search Reverse) mode. Select from two speeds by turning the ring. Release the ring (the shuttle ring returns to centre) to return to playback.

- During playback, turning the ring all the way to the left or right locks the VCR in VSF (Video Search Forward), or VSR (Video Search Reverse) mode. Press **PLAY/X2** to return to regular playback.

TAPE SPEED

	VSF/VSR (①)	VSF/VSR (②)
SP/LP	×3	×7

Slow Motion Playback (with the Remote Control)



1. Press **SLOW** on the remote control during playback.
2. Press **SLOW** ⊕ or ⊖ (to the right of **SLOW)** to vary the slow motion playback speed between 1/5 and 1/30 of the normal playback speed.
3. Press **PLAY/X2** to resume normal playback.

Still Picture and Frame Advance

1. Press **PAUSE/STILL (F.ADV)** during playback. This will freeze the picture on your TV.
2. If noise bars appear on the screen during still picture, set your VCR to the slow mode and press **CHANNEL ▲/▼ (CH ▲/▼)** to make the noise disappear. Then press **PAUSE/STILL (F.ADV)** again.
3. If there is vertical jitter during Still Picture Playback, press **CHANNEL ▲/▼ (CH ▲/▼)** to stop the jitter.
4. Press **PAUSE/STILL (F.ADV)** during still mode for frame advance.
5. Press **PLAY/X2** again to resume normal playback.

Double Speed Playback

1. Press **PLAY/X2** during playback. The tape will be played back at twice the normal speed.
2. Press **PLAY/X2** to resume normal playback.

NOTE

- Sound is muted during video search, slow motion, still picture, frame advance, and double speed playback.
- To avoid damage to the tape, your VCR will resume normal playback after about 5 minutes of slow motion playback and still picture.
- During slow motion, still, frame advance and double speed playback with a tape recorded in the LP mode, the upper part of the picture may be skewed to one side.

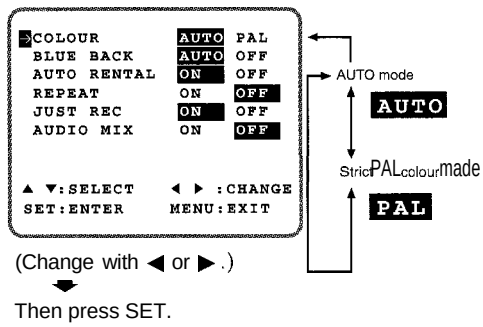
Colour Mode

If a colour recording's quality is poor, the picture may turn black and white. In this event, set the COLOUR mode on the MODE selection screen to PAL (strict PAL colour mode). Normally, the colour mode should be set to "AUTO" mode.

(See Mode Selection on page 17.)

NOTE

- When the colour mode is set to fixed co/our mode while the VCR is playing back a black and white tape or is receiving a black and white broadcast, the picture may be coloured. In this event, set the COLOUR mode on the MODE selection screen to "AUTO" mode.



(Change with ◀ or ▶.)

Then press SET.

NTSC Tape Play Back on PAL TV

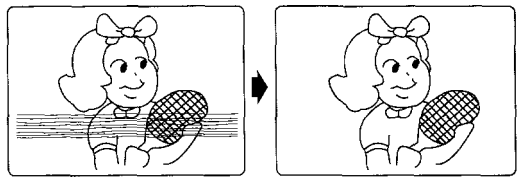
When you play back an NTSC tape on your VCR, it is possible to use a PAL or multi-system compatible TV. However, please note the following:

- The picture will shrink vertically to some degree, as shown in the diagram, but this does not indicate a malfunction in your TV or VCR.
- If your TV does not have a V-HOLD control, the picture may roll and be unwatchable. However, if you use a TV with a V-HOLD control, you can stop the rolling by adjusting the V-HOLD control and watch the picture.
- Horizontal noise bars may appear on the screen during special effect playback (video search, still, slow, frame advance, and double speed playback), possibly accompanied by discolouring.

*Although NTSC tapes can be played back onto a PAL TV, those tapes cannot be dubbed by a PAL system VCR connected to the AUDIO OUT and VIDEO OUT terminals of this product. Tapes recorded in this way cannot be played back on PAL system VCRs.

*Set the COLOUR mode to AUTO. If the COLOUR mode is set to PAL, you cannot play back the tape.

Auto Tracking Control System



Poor tracking Normal tracking

This function automatically adjusts the tracking to match the recorded tape. Auto tracking engages in the following cases:

- When you insert the cassette and begin playback.
- When you press **CHANNEL** ▲ and ▼ **(CH** ▲ and ▼) at the same time.

*When the VCR has been playing back an unrecorded section of tape, and then reaches a recorded tape segment.

When auto tracking engages, "▶" on the TV screen flashes for a few seconds.

NOTE

- When a poorly recorded tape is played back, auto tracking may not operate normally. In this event, manually adjust the tracking with **CHANNEL** ▲/▼ **(CH** ▲/▼) to make any noise disappear.

Auto Head Cleaning System

When the tape is inserted or ejected, this system automatically cleans the drum and heads with a special roller before recording or playback begins, protecting the heads and drum from dirt and preserving beautiful picture quality.

Quick Start with Full Loading Mechanism

Your VCR has a standby function (Full Loading Mechanism) to allow immediate recording and playback. After pressing **REC** or **PLAY/×2**, it takes about 2 seconds until recording or playback is engaged when in the standby mode.

Auto Rental Mode

(This function only works when AUTO RENTAL mode on the MODE selection screen is set to ON.)
The convenient auto rental mode lets you enjoy playback with ease. When you insert a cassette with the erasure protection tab removed (rental videos, etc.), your VCR automatically turns on the power, winds the tape forward to find the recorded section, and plays back the tape. When the tape reaches the end of recorded section, the VCR automatically rewinds the tape, ejects it and turns into POWER STANDBY mode.

NOTE

- If there is more than a 15 second unrecorded section between recorded sections, the tape will automatically stop and rewind. To watch the next recorded section, press **STOP** fast forward to that section and play the tape.
- If the erasure protection hole is covered, press **PLAY/x2** after the power turns on automatically. (Auto Rental Mode does not work.)
- If Auto Rental and Repeat (Auto Repeat) modes on the MODE selection are set to ON simultaneously, Auto Rental will not function. (If this happens, set Repeat (Auto Repeat) mode to OFF.)
- The AUTO REPEAT mode has priority over the AUTO RENTAL mode. If the AUTO REPEAT mode is set to ON and the video cassette reaches its end, the VCR will rewind the tape and play it back again without ejecting the tape or turning into POWER STANDBY mode.

Blue Back

Set the BLUE BACK mode to AUTO on the MODE-selection screen. (See **Mode Selection** on page 17.) This function eliminates monitor noise and mutes sound during playback of unrecorded portions of a tape, and when receiving a non-broadcasting channel. A blue screen will also appear if the VCR is set to the Auxiliary input (LINE IN) mode but no video signal is fed to the VCR. (The BLUE BACK mode is set to AUTO at the factory.)

NOTE

- Blue Back does not function during still picture, variable slow motion and video search
- Blue Back may not function properly if the broadcast signal is too strong or too weak.
- Blue Back cannot be recorded.
- If the antenna signal is weak while recording a TV programme, or if the input signal is weak while tape dubbing, the monitor screen may turn blue back since the unit may not recognize whether or not a proper signal is being received. In this event, set the BLUE BACK mode to OFF.

Full Auto Playback

(This function only works when AUTO RENTAL mode on the MODE selection screen is set to OFF.)
Full Auto Playback lets you enjoy playback with ease. When you insert a cassette with the erasure protection tab removed, your VCR automatically turns on the power and plays back the tape. When the tape reaches its end, the VCR automatically rewinds the tape, ejects it and turns into POWER STANDBY mode.

NOTE

- If the erasure protection hole is covered, press **PLAY/x2** after the power turns on automatically.

Playback of Hi-Fi Recorded Tapes

This VCR will play back both video and audio-only tapes recorded in the Hi-Fi mode.

NOTE

- Stereo sound output is only possible using the AUDIO OUT terminals Sound from the radio frequency converter (RF OUT) is mono only. A blue screen will appear if audio-only Hi-Fi tapes are played back.

Audio Output Mode

The audio output mode is controlled by **AUDIO OUT** on the remote control. The VCR is normally set to the Hi-Fi mode, with L and R displayed on the VCR display, and normal stereo sound output.
Select ❑ , and only the Hi-Fi Left channel audio is heard from both the Right and Left speakers.
Select R, and only the Hi-Fi Right channel audio is heard from both the Right and Left speakers.
If you select the mono linear track, L and ❑ will disappear.

NOTE

- Should the Hi-Fi output level be poor, the VCR will automatically select the mono linear track output.
- When playing back tapes which have only Hi-Fi sound recorded. if Hi-Fi sound is not reproduced, or if there is some noise in the audio, press **CHANNEL** ▲ or ▼ **(CH** ▲ or ▼) until the sound improves

Adjusting Hi-Fi Audio Tracking

(To adjust the Hi-Fi tracking manually when playing back a poorly recorded Hi-Fi tape)
*Normally you can simultaneously press and hold both **CHANNEL** ▲/▼ **(CH** ▲/▼) to obtain the optimal Hi-Fi audio tracking.

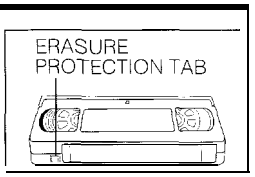
- If Hi-Fi audio is unstable (frequent dropouts, etc.) with a rental video, a tape recorded on another VCR, restore normal tracking while playing back the tape as described below:

❶ Simultaneously press **CHANNEL** ▲/▼ **(CH** ▲/▼).
❷ Press **CHANNEL** ▼ **(CH** ▼) repeatedly at equal, short intervals until the L and R indicators disappear from the VCR display.
❸ Press **CHANNEL** ▲ **(CH** ▲) in the same manner while counting button operations until the ❑ and ❑ indicators reappear and then disappear again
❹ Press **CHANNEL** ▼ **(CH** ▼) again for half the number of times counted in step ❸ above to obtain optimal tracking.

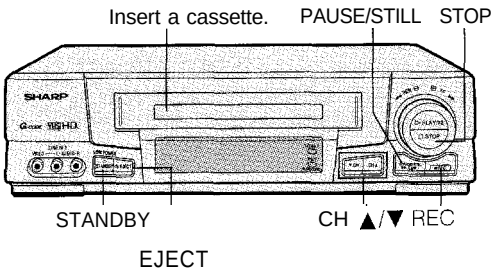
Recording a TV Programme

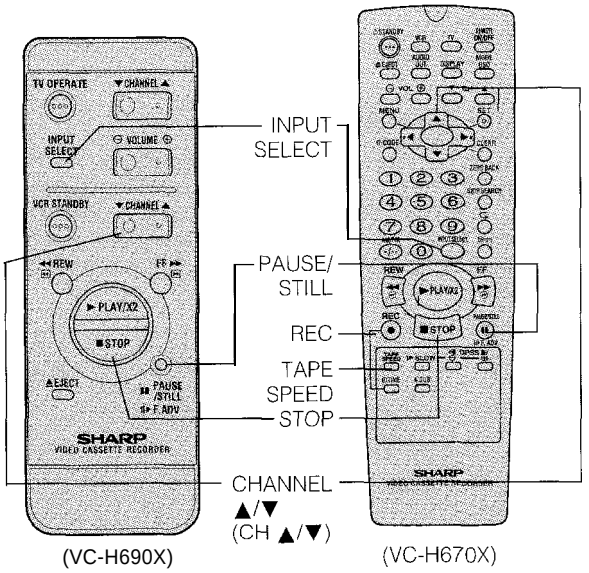
Cassette Erase Protection

A VHS cassette has a removable tab to prevent accidental erasure of recorded material. Removing the tab prevents recording. To record on a video cassette with the tab removed, place adhesive tape over the tab opening



Recording a TV Programme





PREPARATION

• Turn on your TV and select the video channel.

PROCEDURE

1. Turn on the VCR (See page 5, item 3.)
2. Insert the cassette, making sure the erasure protection hole is covered.
3. Select the channel position you wish to record with **CHANNEL ▲/▼ (CH ▲/▼)**.
4. Select the SP (Standard Play) or LP (Long Play) recording speed with **TAPE SPEED** on the remote control ("SP" or "LP" will light up on the VCR display). SP (Standard Play) gives the best picture quality. LP (Long Play) gives the longest recording time.
5. Press **REC.** (If the erasure protection hole is uncovered, the cassette will be ejected.) To pause during recording, press **PAUSE/STILL (F. ADV)**. To resume recording, press **PAUSE/STILL (F. ADV)** again.
6. To stop recording, press **STOP.**

NOTE

- The pause mode disengages automatically after about 5 minutes, and the VCR enters stop mode.
- To record audio and video from an external source through the AUDIO/VIDEO terminal on the front or rear of the VCR, press **INPUT SELECT** on the remote control or press **CHANNEL ▲/▼ (CH ▲/▼)** to select the L1 or L2 channel position situated between the last channel and first channel (When the L1 or L2 position is selected, "L1 or L2" is displayed where a channel position number is usually displayed.)
- If the TV signals are weak and the picture changes to monochrome, set the PAL mode on the MODE selection screen (See **Colour Mode** on page 20.) Normally, the colour mode should be set to "AUTO"

To Watch Another TV Programme While Recording

After steps 1 to 5 have been completed, select the programme you wish to view using the TV tuner. At the end of the tape, your VCR will automatically stop recording, rewind to the beginning of the tape, eject the tape and turn to the POWER STANDBY mode.

Recording Hi-Fi Stereo Sound

This VCR automatically records audio signals on two kinds of audio tracks.

Hi-Fi: Using specialized rotary heads, audio signals are recorded on the video track in the FM format, Multi-channel broadcasts (stereo or bilingual programmes) are automatically recorded on two channels.

Normal: Audio signals are recorded monaurally on the linear track. Stereo broadcasts are recorded in mono, and only the main audio track of bilingual programmes is recorded.

NOTE

- Video cassettes recorded on a non-Hi-Fi VCR can also be played back. However, if the audio signals are recorded on two linear channels, stereo programmes will be played back monaurally and bilingual programmes will be played back with both the main and sub audio tracks mixed together.
- Video cassettes recorded on this VCR can be played back on a non-Hi-Fi VCR. However, only the normal (linear) track will be played back.

Switching Input Signals

Various sources of video and audio signals can be recorded as shown in the following chart.

(a) Selecting a channel will record both video and audio from the VCR tuner.

(b) Selecting an external source position (to select an external source position, press **INPUT SELECT** or select a channel situated between the last channel and the first channel with **CHANNEL ▲/▼ (CH ▲/▼)**) will record both video and audio from an external source via the back-panel AUDIO/VIDEO LINE 1 or front LINE IN 2 terminal.

Input mode	TV screen	Signals Recorded		
		Video track	Normal audio track	Hi-Fi audio track
Tuner	2	Signals from tuner		
External 1 (LINE 1)	L1	Signals from AUDIO/VIDEO (LINE1) socket on the rear of the VCR		
External 2 (LINE 2)	L2	Signals from LINE IN 2 terminal on the front of the VCR		

Recording Audio Only

This VCR can record Hi-Fi audio-only signals,

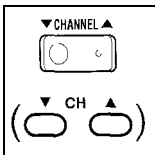
1. Connect the audio source (CD player, etc.) to the AUDIO-IN L/R terminals on the front or rear of the VCR.
2. Select the connected external position LINE IN 1 or 2 ("L1" or "L2" lights up) by pressing **INPUT SELECT** or **CHANNEL ▲/▼ (CH ▲/▼)**.
3. Press **TAPE SPEED** on the remote control to select SP or LP mode.
4. Press **REC.**

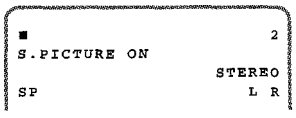
Simple Recording Timer

There are two ways to use this Simple Recording Timer for your convenience.

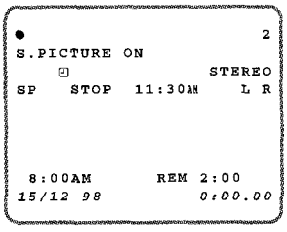
- Immediate recording:
  Convenient when having an unexpected visitor or telephone call
- Delayed recording:
  Convenient when leaving the house or going to bed.

Immediate Recording





❶ Select the channel position to be recorded by pressing **CHANNEL ▲/▼ (CH ▲/▼)**.
(fx.: Channel position: 2)

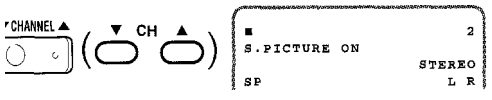


@ Press **REC** to enter the normal recording mode. Then, press **REC** repeatedly to set the desired ending time.
(fx.: Ending time: 9:30 AM)

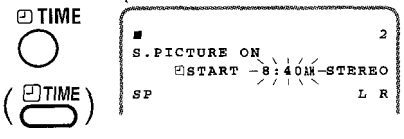
NOTE
- Each press of **REC** increases the stop time by 10 minutes

NOTE
- Press **STOP** to terminate recording

Delayed Recording



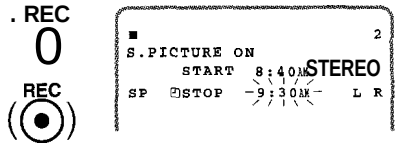
❶ Select the channel position to be recorded by pressing **CHANNEL ▲/▼ (CH ▲/▼)**.
(fx. : Channel position: 2)



❷ Set the starting time by pressing **TIME**. *(Ex.: Starting time: 8:40 AM)*

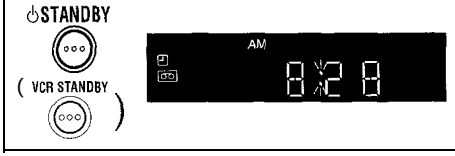
NOTE
- Each press of **TIME** Increases the start time by 10 minutes.

*Setting the time within a 24-hour period in 10-minute intervals is possible.



❸ Set the ending time by pressing **REC.** *(Ex.: Ending time: 9:30 AM)*

NOTE
- Each press of **REC** increases the stop time by 10 minutes.



❹ Press **STANDBY** to turn to the POWER STANDBY mode.
(See page 5, item 2.)
(Ex.: Present time: 8:28 AM)

NOTE

*After the Simple Recording Timer is set, the channel position cannot be changed

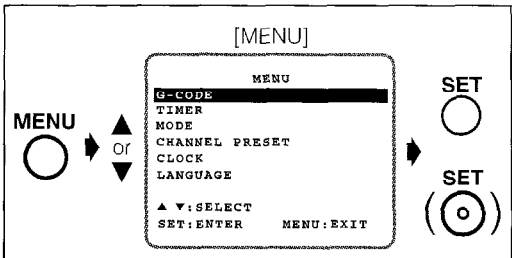
- To confirm the starting time and the ending time, first turn on the power Then press **TIME** to confirm the starting and ending time. And turn to the POWER STANDBY mode.
- To clear the Simple Recording Timer setting during setting of "Delayed Recording", press **CLEAR** on the remote control. To clear after setting, turn on the power, press **TIME** to select Simple Recording Timer mode, and then while the START time is flashing, press **CLEAR.**
- The Simple Recording Timer cannot be set if the timer has been preset ("⏲" indicator on the VCR display is lit). If this is the case, cancel the timer standby mode by pressing **TIMER ON/OFF,** turn on the power and then proceed with setting of the Simple Recording Timer.
- Select the SP (Standard Play) or LP (Long Play) recording speed with **TAPE SPEED** on the remote control ("SP" or "LP" will light up on the VCR display). SP (Standard Play) gives the best picture quality. LP (Long Play) gives the largest recording time.
- The stop time for delayed recording must be set within 10 seconds of setting the start time, otherwise start time must be set again.

Programming the Timer with G-CODE®

This VCR has the G-CODE Programming System. By simply inputting the G-CODE number with the O-9 numeric buttons, you can programme your VCR for timer recording.
The G-CODE numbers are listed in most newspaper, TV guide, and local cable TV listings.
The timer can be set for automatic recording of up to 8 events over a 365 day period. In addition, each of the events can be set to be recorded on a daily or weekly basis up to the limit of the tape.

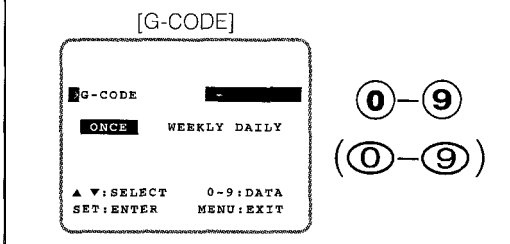
PREPARATION:

- Select the video channel on your TV. Turn on the VCR. (See page 5, item 3.)
- Load the cassette, ensuring the erasure protection hole is covered. The VCR power will automatically turn on
- Check that the clock is displaying the correct time.



❶ Press **MENU**.

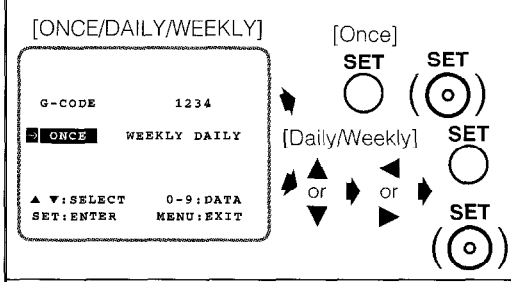
❷ Select G-CODE setting mode with ▲ or ▼ and then press **SET**.



❸ Set the G-CODE number with the numeric (**0** to **9**).

NOTE

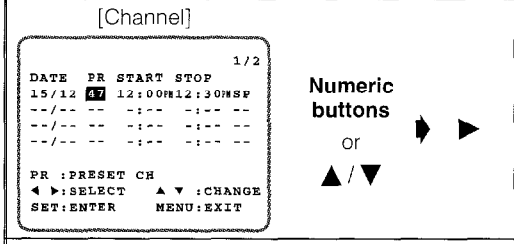
- For the G-CODE number, refer to your newspaper or TV guide.
- Press **G-CODE** to directly select this screen.



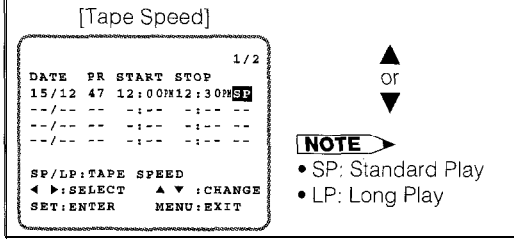
❹ If you want to record only once, press **SET** and go to step ❺. Otherwise, press ▲ or ▼ to select daily/weekly setting mode, and then select "DAILY" or "WEEKLY" by pressing ◀/▶. And then press **SET**.

NOTE

"ONCE": To record only once.
"DAILY": To record every day at the same time.
"WEEKLY": To record every week at the same time.



❺ If you are going to record a programme from a station which does not have the PR number programmed, ("--" is displayed) set that number to be the same as the PR number to which your broadcasting channel is set into. (See Note on the next page.) Use the numeric or ▲/▼. Then press ▶.
Ex.: 47



❻ Select the tape speed with ▲ or ▼. (See **Intelligent Timer Recording (JUST REC)** on page 31.)

NOTE

- SP: Standard Play
- LP: Long Play

Continued on next page

SET 0 SET (6) &J-CODE ONCE WEEKLY DAILY	❼ Press SET. **NOTE** To programme additional timer settings, press SET and repeat steps ❸ through ❼.
MENU Normal Screen	❽ To return to the normal screen, press **MENU.**
TIMER ON/OFF TIMER ON/OFF AM 10:28	❾ To set the VCR for automatic timer recording, press TIMER ON/OFF and ensure the "⏲" indication lights on the VCR display.

NOTE

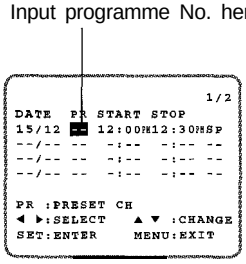
- Please be sure to check that the start and end times of two different programmes do not overlap, as the remote control has been designed to accept the basic individual G-CODE number only. If the recording periods of two programmes overlap, the beginning of the second programme will not be recorded.
- To cancel the programmed G-CODE setting, select the TIMER setting mode on the MENU screen. Then select the programme number you wish to cancel with ▲/▼ and press **CLEAR. (See Cancelling Timer Programmes** on page 30.)

Setting the Programme Number In Step 5

When using G-CODE for the first time the Programme number (PR) on the screen shows two dashes and is highlighted white. Set it to be the same as the PR number to which your broadcasting channel is set into.
For instance if you can view CH 47 on programme (PR) 47, set the On screen PR number to 47.

- You need to set this only once.
- If the channels are retuned you need to set the PR numbers again.

Input programme No. here



NOTE

- If the wrong programme has been recorded, for future recordings change the PR number (i, e. Step ❺) to the same preset channel position number as on the VCR. (Refer to **Manual Tuning** on page 14)

Recording with the Timer

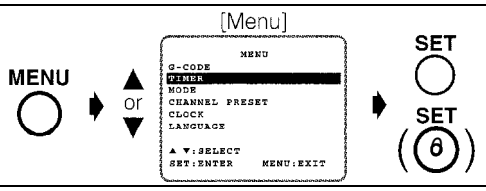
The timer can be set manually for automatic recording of up to 8 events over a 365 day period.

PREPARATION

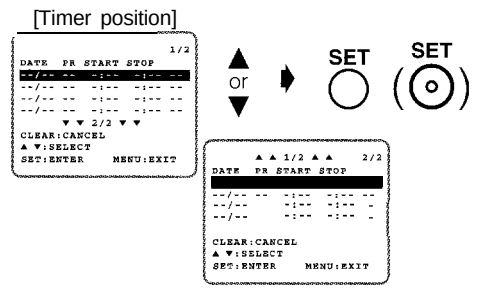
- Select the video channel on your TV. Turn on the VCR (See page 5, item 3).
- Load the cassette, ensuring the erasure protection hole is covered. The VCR power will automatically turn on.
- Check that the clock is displaying the correct time. **(See Setting the Clock** on page 12.)

PROCEDURE

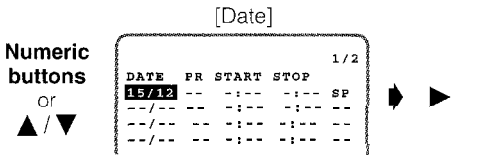
Example: Recording channel position 47 in SP mode from 12:OO PM to 12:30 PM, December 15, 1998, if the present time is 10:28 (morning), December 14, 1998.



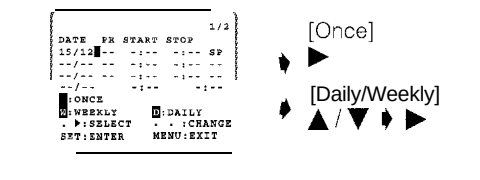
❶ Press **MENU.**
Select the TIMER-setting mode and press **SET.**



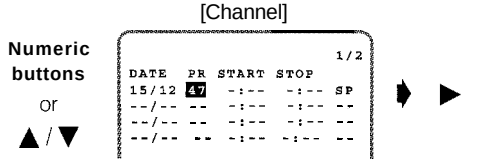
❷ Select the timer position with ▲/▼ and press **SET.**
- If the timer positions 1 to 4 have already been set, the screen changes 2/2 (timer positions 5 to 8).



❸ Set the date for timer recording with the numeric buttons or ▲/▼ on the remote control and then press ▶.
. First set the "day" digits and then "month". If there is only one "day" or one "month" digit, enter a 0 first.



❹ If you want to record only once, press ▶ and go to step ❺. Otherwise, select "D (DAILY)" to record at the same time each day or "W (WEEKLY)" to record at the same time each week by pressing ▲ or ▼, and then pressing . .



❺ Set the channel number using the numeric buttons or ▲/▼ and then press . .

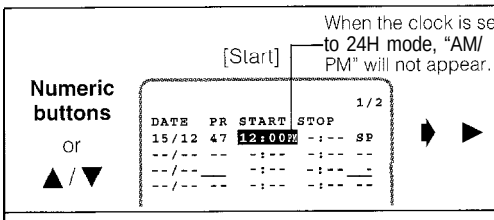
NOTE

- To record audio and video from an external source through an AUDIO/VIDEO terminal on the VCR, press ▲/▼ to select an AV channel (When an AV position is selected, "L1" or "L2" is displayed where a channel position number is usually displayed.)

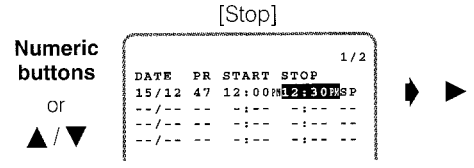
Continued on next page

NOTE

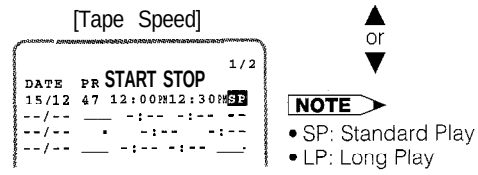
- ▲/▼ can also be used to set the date and time Instead of the numeric buttons
- Press 0 first if the day, month, hour or minute is a single digit.



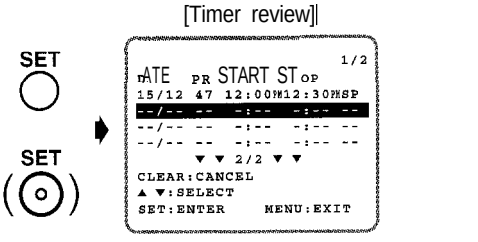
❻ Set the start time with the numeric buttons or ▲/▼ and press ▶.



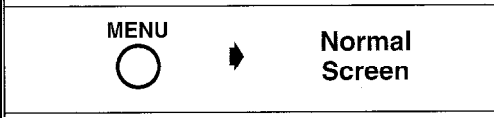
❼ Set the stop time with the numeric buttons or ▲/▼ and press ▶.



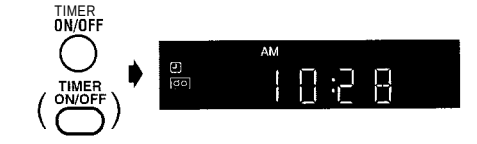
❽ Select the tape speed with ▲ or ▼. (See **Intelligent Timer Recording (JUST REC)** on page 31.)



❾ Press **SET.** To programme additional timer settings, repeat steps ❸ through ❽.



❿ To return to the normal screen, press **MENU.**



⓫ To set the VCR for automatic timer recording, press **TIMER ON/OFF** and ensure the "⏲" indicator lights on the VCR display.

NOTE

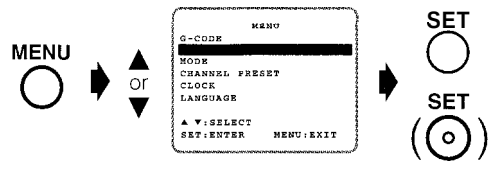
- If the video cassette runs out before recording all the programmes, your VCR will stop, eject the cassette, and shut off automatically.
- If power is interrupted for more than 60 minutes (power failure, etc.), all timer settings will be cancelled.
- If TIMER ON/OFF is pressed when there is no cassette loaded, "⏲" flashes for 5 seconds, indicating that timer recording is not possible.
- If TIMER ON/OFF is pressed while a cassette with an uncovered erasure protection hole is loaded, "⏲" flashes and the cassette is ejected
- When "⏲" is lit, regular VCR operation, clock setting and setting/cancelling/confirming timer positions are not possible. For regular VCR ooeration. clock setting and setting/cancelling/confirming timer positions, press TIMER ON/OFF to disengage the timer ("⏲" disappears), and then turn on your VCR.
- During timer recording, the timer cannot be set.
- To terminate timer recording, press STOP during timer recording.
- If no buttons are pressed within one minute while setting a timer programme position, the mode automatically returns to the previous mode.
- If the same time is input for the start time and the stop time, the timer setting will be cancelled

Confirming Timer Programmes

You can see on the On Screen Display a list of all timer programmes that are already set

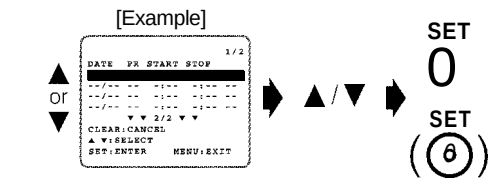
PREPARATION

- Turn on your TV and VCR and select the video channel on the TV.



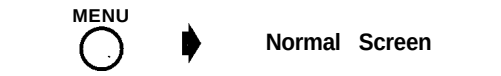
❶ Press **MENU.** (If the "⏲" indicator on the VCR display is lit, cancel the timer standby mode by pressing **TIMER ON/OFF** and then turn on the power.)

❷ Select the TIMER-setting mode with ▲/▼ and then press **SET**.



❸ The screen for confirming programmes that have been set will appear.

- Check the information displayed.
- If you want to correct the data, select the programme to be changed with ▲/▼ and then press **SET.** Correct the setting as described on pages 28 and 29.



❹ To return to the normal screen, press **MENU,**

- After checking or correcting the programme contents, press **TIMER ON/OFF** to enter the Timer Standby mode.

Cancelling Timer Programmes

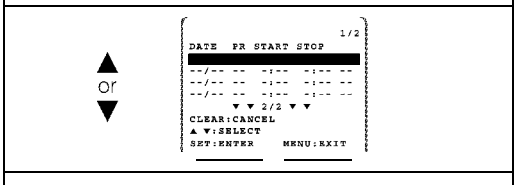
Perform the following procedure to cancel timer programmes that have already been set

PREPARATION

- Turn on your TV and VCR and select the video channel on the TV.

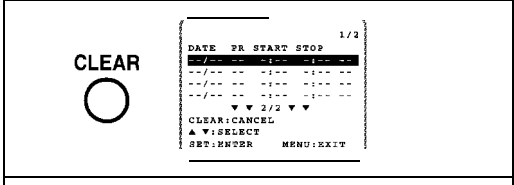
❶ Press **MENU.** (If the "⏲" indicator on the VCR display is lit, cancel the timer standby mode by pressing **TIMER ON/OFF** and then turn on the power.)

❷ Select the TIMER-setting mode with ▲/▼ and then press **SET.**



❸ The screen for confirming timer recording programmes that have been set will appear,

- Select the programme number you wish to cancel with ▲/▼. (The selected programme will appear highlighted.)



❹ Double-check that it is the programme you wish to cancel, and press **CLEAR.** It will be cleared on the screen.

❺ To return to the normal screen, press **MENU.**

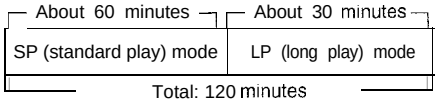
- If there are still some programmes set, press **TIMER ON/OFF** to enter the Timer Standby mode.

Intelligent Timer Recording (JUST REC)

When the tape is expected to run out halfway during timer recording (except for the Simple Recording Timer) in the SP (standard play) mode, the mode will automatically change to the LP (long play) mode to prevent termination of recording.
This function works only when JUST REC mode on the MODE selection screen is set to ON.

For example:

- When a 120-minute programme is timer-recorded with a 90-minute tape while the automatic select is set to LP mode as shown below.



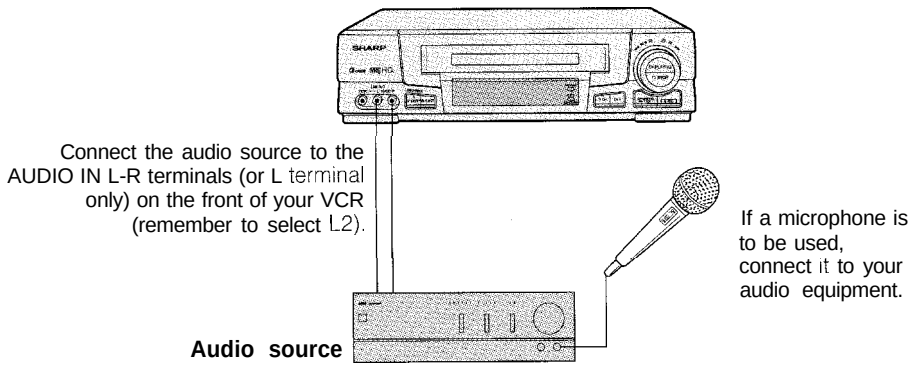
NOTE

- This function may not properly work for video tapes other than E-60, E-90, E-180 and E-240
- This tape may not be completely used up.
- When more than one programme is set on the timer, the automatic recording function will work for the length of each timer-set programme, but not for the total length of all programmes.
- When the LP mode is initially used for timer-recording a programme, if the tape is not long enough to record the entire length of the programme, the programme will not be entirely recorded.

Audio Dubbing

This VCR allows you to add a narrative or background music to a pre-recorded tape.

- The audio signal will be recorded on the mono (linear) track. The Hi-Fi tracks remain unchanged


Connect the audio source to the AUDIO IN L-R terminals (or L terminal only) on the front of your VCR (remember to select L2).
If a microphone is to be used, connect it to your audio equipment.
Audio source

❶ Connect the audio source to the AUDIO IN L-R terminals (or L terminal only) on the front of the VCR as shown above. (The input terminals on the rear of the VCR cannot be used.)
❷ Insert the pre-recorded tape into the VCR.
❸ Press **PLAY/x2** to view the recording.
❹ Press **PAUSE/STILL** when you reach the point on the tape where you want to begin audio dubbing.
❺ Press **A.DUB**. ("A.DUB" and "L2" will be shown on the On Screen Display.)
❻ Wait about 4 seconds and then press **PAUSE/STILL** to begin audio dubbing.
❼ Press **STOP** to finish audio dubbing. ("A.DUB" will disappear from the On Screen Display.)

NOTE

- Do not press **CHANNEL ▼/▲ (CH ▼/▲)** during audio dubbing.
- Because the audio signal is recorded on the mono (linear) track, any previous recording on this track will be erased
- If the Auto Tracking function is used during audio dubbing, the recorded audio may be distorted. Wait about 4 seconds before pressing **PAUSE/STILL** to begin audio dubbing in step ❻

Listening to an Audio Dubbed Tape

- Press AUDIO OUT on the remote control to select the desired audio output. (See the table below and refer to **Audio Output Mode** on page 22.)
- If you want to listen to the original and dubbed audio signals simultaneously, set the AUDIO MIX mode to ON (see page 17).

AUDIO MIX	AUDIO OUT MODE	VCR DISPLAY	RESULT
OFF	Hi-Fi audio	L R	Original Hi-Fi audio (L&R channels)
		L	Original Hi-Fi audio (L channel)
		R	Original Hi-Fi audio (R channel)
	Mono audio		Dubbed mono audio
ON	Hi-Fi and Mono audio	L R	Original Hi-Fi audio (L&R channels) plus dubbed mono audio.
		L	Original Hi-Fi audio (L channel) plus dubbed mono audio.
		R	Original Hi-Fi audio (R channel) plus dubbed mono audio.

Virtual Dolby Surround/SURROUND-Function

Only for VC-H690X

- When set to DOLBY VIRTUAL ON, this function reproduces the Dolby Surround sound recorded on the Hi-Fi track.
- When set to SURROUND ON, this function can also be used to create a wider audio range for tapes recorded in Hi-Fi or monaural without Dolby Surround sound.

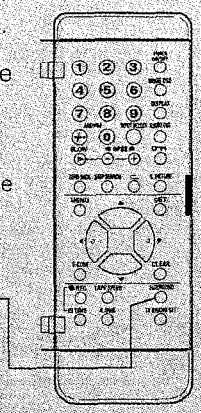
❶ Each time **SURROUND** is pressed on the remote control, the setting changes as shown.

DOLBY VIRTUAL OFF → DOLBY VIRTUAL ON → SURROUND ON → (back to DOLBY VIRTUAL OFF)

- The display shown on the left appears on the screen.

NOTE

- If **SURROUND** is not pressed for three seconds, the picture returns to the normal screen.



❷ Select the audio mode according to the type of tape being played back.

Audio mode / Tape audio	DOLBY VIRTUAL OFF	DOLBY VIRTUAL ON	SURROUND ON
Dolby Surround recorded on Hi-Fi track	— Dolby Surround off	○ Dolby Surround on	× Creates unnatural sound. Not recommended.
Hi-Fi (without Dolby Surround)	— (No effect)	× Creates unnatural sound. Not recommended.	○ Creates wider audio range. (Virtual surround sound effect)
Monaural (without Hi-Fi or Dolby Surround)	— (No effect)		○ Creates wider audio range. (Modified stereo effect)

❸ When watching broadcasts on the TV with the VCR tuner (VC-H690X)

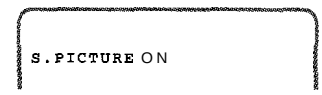
Audio mode / Broadcasted audio	DOLBY VIRTUAL OFF	DOLBY VIRTUAL ON	SURROUND ON
Multiplex broadcasts with Dolby Surround	— Dolby Surround off	○ Dolby Surround on	○ Creates wider audio range. (Virtual surround sound effect)
Multiplex broadcasts without Dolby Surround	— (No effect)	× Creates unnatural sound. Not recommended.	○ Creates wider audio range. (Modified stereo effect)

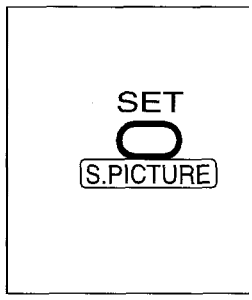
NOTE

- To create virtual Dolby Surround or virtual surround sound when using this function with the VCR tuner, the broadcast must be in multiplex and the VCR must be connected to the TV or audio equipment using the AUDIO OUT terminals. This function will not work when connected using the RF OUT terminal.

New Sharp Super Picture

This function creates clearer modulation during playback for high picture quality.





Press **S. PICTURE** on the VCR.
"S.PICTURE ON (or OFF)" will appear on the TV screen for a few seconds. Each time the button is pressed, the mode switches between ON and OFF. (The New Sharp Super Picture is preset to ON at the factory.)

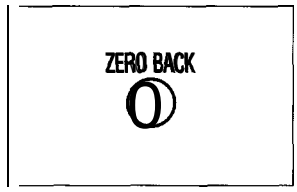
ON:
Normally leave the mode set to ON. This high picture quality function will create a clearer image during playback.

OFF:
Set to OFF when playing back a tape on the VCR while editing or when strong noise appears on the screen. Set to OFF when using the VCR as an editing source.

NOTE
- This function only operates during playback. It will not operate when recording or watching a TV programme with the VCR tuner
- This function cannot be set to ON/OFF with the MENU screen displayed.
- If power is interrupted for more than 60 minutes (power failure, etc.), the setting will return to ON.

Zero-Back Function

The zero-back function makes the cassette fast forward (or rewind) to the previously set "0:00.00" point and stop there.



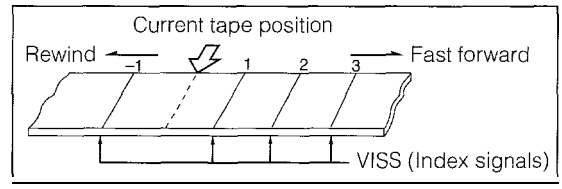
1. Make sure the counter is displayed, then press **CLEAR** on the remote control at the point you wish to return to later. "0:00.00" is displayed.
2. Press **ZERO BACK** on the remote control. The VCR automatically detects the direction of the "0:00.00" position and fast forwards (or rewinds) the tape.
3. When the tape reaches the "0:00.00" position, the tape automatically stops.

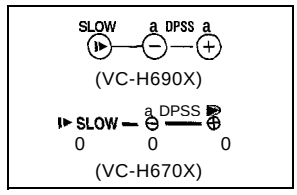
NOTE
- The zero-back function does not operate during recording. The function works during the playback, stop, fast forward, rewind and video search modes.

DPSS (Digital Programme Search System)

With this feature you can quickly locate a desired section of the tape. The DPSS feature makes use of VISS (index) signals to search for a specified tape segment and begin playback automatically.

VISS (Index) ***Signal***
An VISS (index) signal is automatically recorded on the tape at the start of ordinary recording, simple recording timer and timer recording.





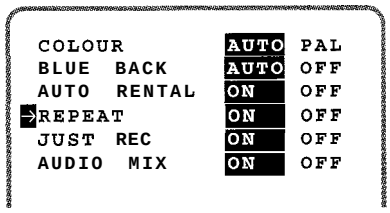
1. Load a tape containing VISS (index) signals into the VCR.
2. Select the VISS (index) number of the desired programme using **DPSS** ▶ or ◀ on the remote control.
   Search starts immediately. (When a signal is located, the displayed number decreases.)
3. When the selected VISS (index) signal-encoded section is found, playback begins automatically.

NOTE
- DPSS may not function properly if the VISS (index) signals are too close together (within 5 minutes of each other).
- DPSS can be cancelled by pressing PLAY/X2 or STOP.
- If the tape reaches its end or is rewound completely before locating the desired VISS (index) signal, DPSS is cancelled.
- DPSS may not function for damaged or worn tapes.
- The DPSS function cannot be used with tapes that contain no VISS (index) signals.
- The starting point of a programme may vary slightly.
- DPSS does not operate during the slow, record, timer standby, and timer recording modes, or when there is no cassette loaded

Auto Repeat

With this feature, the entire tape is played back repeatedly.

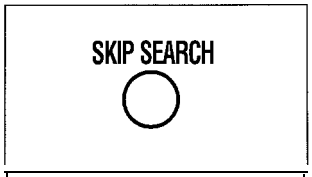
❶ Set the REPEAT mode on the MODE-selection screen to ON.
When the video cassette reaches its end, the VCR will stop playback, rewind the tape, and automatically play it back again.



NOTE

- The ON/OFF status of the Auto Repeat can be checked on the MODE Selection screen **(See Mode Selection** on page 17.) (And when the Auto Repeat is ON, "REPEAT" will be displayed on the OSD.)
- If the Auto Repeat is on and the tape is rewound to the beginning with rewind or reverse video search, the tape will automatically start playback.

Skip Search

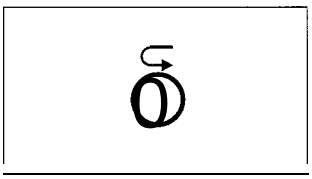


When **SKIP SEARCH** on the remote control is pressed during playback mode, the VCR will perform a forward video search for a fixed interval of playback time before resuming playback. Depending on how many times the button is pressed, it is possible to set the forward video search time to approx. 30, 60, 90 or 120 seconds of recorded material.

Number of Times Pressed	Forward Video Search Time	(On the VCR display)
1 time	Approx. 30 sec. (of playback time)	0:30
2 times	Approx. 60 sec. (of playback time)	1:00
3 times	Approx. 90 sec. (of playback time)	1:30
4 times	Approx. 120 sec. (of playback time)	2:00

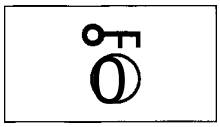
During skip search, the interval of the video search will flash on the display.

Instant Replay



When ↺ on the remote control is pressed during playback, the VCR will perform a reverse video search for a fixed interval of playback time before resuming playback. Depending on how many times the button is pressed, it is possible to set the reverse video search time to approx. 20, 40, 60, or 80 seconds of recorded material.

New Child-Proof Lock



With this feature, you can lock all VCR modes to prevent accidental change.
This function works even when the VCR power is off, thus preventing children from operating the VCR or viewing select programmes while you are away from home.

New Child-Proof Lock

1. Press ⊙🔑 on the remote control for about 2 seconds.
   "⊙🔑" flashes and "☼---" lights on the VCR-function display.
2. Press ⊙🔑 again.
   "⊙🔑" remains lit on the VCR display confirming that New Child-Proof Lock has been activated.
3. Now regardless of what other operating buttons are touched, the VCR will continue to operate in the present mode.
   (If New Child-Proof Lock is activated during playback, once the tape reaches its end, the VCR automatically rewinds the tape, ejects it, and turns into POWER STANDBY mode.)

Disengaging New Child-Proof Lock

- Press ⊙🔑 for about 2 seconds.
  "⊙🔑" starts flashing and then disappears. Now, New Child-Proof Lock is disengaged

Advanced New Child-Proof Lock

1. Press ⊙🔑 on the remote control for about 2 seconds.
   "⊙🔑" flashes and "☼---" lights on the VCR display.
2. Input the personal code number (4 digit code) with the numbered buttons. The personal code number you have input is displayed on the VCR display.
3. Press ⊙🔑 again.
   "⊙🔑" remains lit on the VCR display confirming that New Child-Proof Lock has been activated.
4. Now regardless of what other operating buttons are touched, the VCR will continue to operate in the present mode.
   (If New Child-Proof Lock is activated during playback, once the tape reaches its end, the VCR automatically rewinds the tape, ejects it, and turns into POWER STANDBY mode.)

Disengaging Advanced New Child-Proof Lock

1. Press ⊙🔑 for about 2 seconds.
   "⊙🔑" flashes and "☼---" lights on the VCR display.
2. Input the personal code number (4 digit code) you used to activate Advanced New Child-Proof Lock with the numbered buttons. The personal code number you have input is displayed on the VCR display.
3. Press ⊙🔑 again.
   "⊙🔑" disappears. Now, New Child-Proof Lock is disengaged. If the code number is wrong, "☼---" is displayed on the VCR display. Retry to input the right code number. Press ⊙🔑 again.

If you forget your personal code number, you can disengage New Child-Proof Lock with the following procedure:

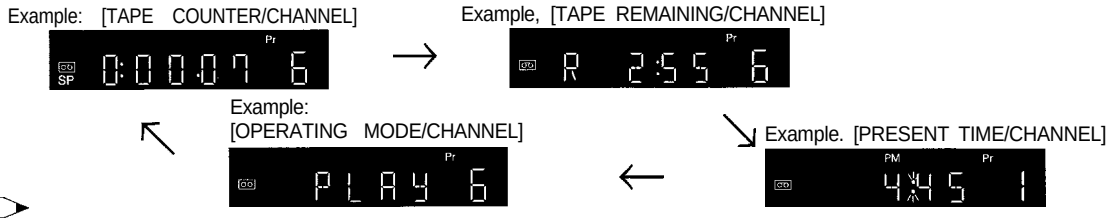
1. Press ⊙🔑 for about 2 seconds.
   "⊙🔑" flashes and "☼---" lights on the VCR display.
2. Press **STANDBY** on both the VCR and remote control **(VCR STANBY** for the remote control of VC-H690X) for at least 2 seconds. New Child-Proof Lock is disengaged.

NOTE

- If, while New Child-Proof Lock is on, you attempt to change modes by pressing another button, the "⊙🔑" indicator will flash on the VCR display

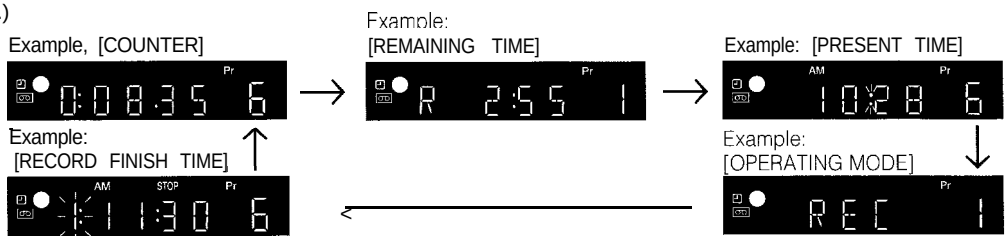
VCR Display

When DISPLAY is pressed, the display changes in the following way. (However, the following is the case when the clock time is set and displayed in the 12-hour system.)



NOTE

- During timer recording or Simple Recording Timer, the display shows the record finish time. When **DISPLAY** is pressed, the display changes in the following way.
  (If the "⏲" indicator on the VCR display is lit, cancel the timer standby mode by pressing **TIMER ON/OFF** and then turn on the power.)



NOTE

- During Simple Recording Timer recording, "⏲" lights

Counter Clear

Make sure the counter is displayed, then press CLEAR on the remote control. "0:00.00" is displayed.

NOTE

- The counter will reset to "0:00.00" when the tape is rewound completely

Tape Remaining Display

The tape remaining display only works with tapes recorded in PAL. It does not work with tapes recorded in NTSC.

On Screen Display

*Select FULL or COUNTER display mode by pressing **MODE OSD** on the remote control.

VCR Display

*Press **DISPLAY** on the remote control.

NOTE

- This function accurately displays the tape remaining only for tapes recorded in PAL mode. (It does not accurately display the tape remaining for tapes recorded in NTSC or MESECAM modes.)
- When you insert the tape and the VCR is in the stop mode, the tape remaining cannot be computed. The following Indicator is shown when the tape remaining has not yet been computed or cannot be computed.

[OSD]

[VCR display]

- When you start recording or playback, the VCR will begin the computation. However, this may take some time. When computation is completed, tape remaining will be shown on the OSD and VCR display for 5 seconds.
- If the "REM." mode is selected with **MODE OSD** or **DISPLAY** and the VCR is in stop mode, the tape will automatically fast forward or rewind for a few seconds and then the VCR will begin computing the amount of tape remaining.
- During computation, **REC** will not function, and pressing **STOP, PLAY/×2**, or other buttons will interrupt the computation.
- Setting the DPSS or ZERO-BACK function during computation may cancel it.
- The indicated length of tape remaining is only an approximate guide.
- This function may not properly work for video tapes other than E-60, E-90, E-180 and E-240.
- The length of tape remaining during fast forward or rewind may be indicated as greater than it actually is
- When VHS C and S-VHS C tapes are used with a cassette adapter, the indication may not be correct.

Warning for the length of tape remaining

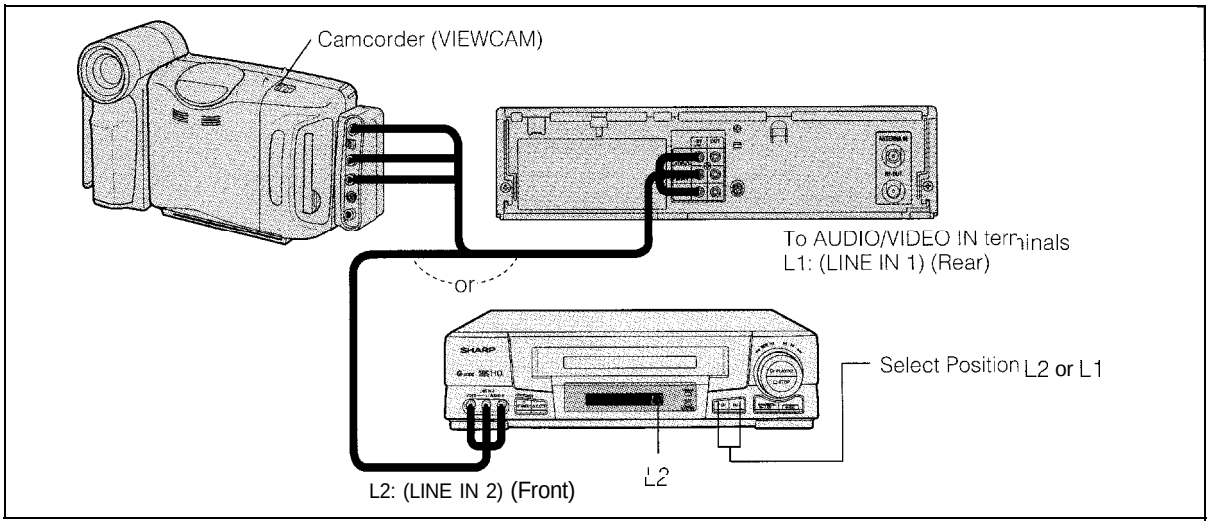
When the tape reaches the point where only about five minutes of recording time is left, the remaining length of tape will be automatically displayed, as a warning.

NOTE

- No warning, however, will be shown during timer recording or Simple Recording Timer recording

Editing from a Camcorder to Your VCR

Editing from your Camcorder is extremely easy using your VCR with a linear tape counter, etc. The connection diagram below is for a guideline only. Refer to your Camcorder Operation Manual for precise connection information.



Specifications

Format: VHS PAL standard
Video recording system: Two rotary heads, helical scan
Video signal system: PAL colour or monochrome signals: 625 lines
Hi-Fi audio recording system: Deep-layer recording system conforming to stereo Hi-Fi VHS standard
Maximum playing time: 480 min. with E-240 video cassette in LP mode
Tape width: 12.7 mm
Tape speed: 23.39 mm/sec. SP; 11.70 mm/sec. LP
Antenna: 75 Ohm unbalanced
Reception channels: VHF channel 0 to 12, UHF channel 28 to 69
RF output signal: UHF channel 28 to UHF channel 69 (preset to UHF channel 37)
Power requirement: AC 240 V, 50 Hz
Power consumption: VC-H670X: 16 W (approx.)/1.0 W Max (at Low Power Mode)
VC-H690X: 17 W (approx.)/1.O W Max (at Low Power Mode)
Operating temperature: 5°C to 40°C
Storage temperature: – 20°C to 55°C
Video input: 1 .0 Vp-p, 75 Ohm
output: 1 .O Vp-p, 75 Ohm
Audio input: (phono type) Line: – 8dBs, 47 kohm
output: (phono type) Line: – 8dBs (approx.) , 1 kohm
Hi-Fi audio: Dynamic range: Typically 90 dB
Frequency response: 20 Hz-20 kHz
Wow and flutter: less than 0.005% Wrm
Dimensions: 360 (W) x 283.5 (D) x 93 (H) mm
Weight: 3.3 kg
Supplied accessories: R6 (AA, UM/SUM-3) battery x2
75-ohm coaxial cable, operation manual, remote control unit

Design and specifications are subject to change without notice.

Before Calling for Service

Check this list before calling for service

Problem	Possible Cause/Solutions
MISCELLANEOUS PROBLEMS	
• No power. Cannot turn on the VCR	• **See page 5, item 3.** • Make sure the power cord is plugged in. • Check the outlet, fuse or circuit breaker.
• Cassette cannot be ejected	• Press **TIMER ON/OFF** and disengage the timer.
*The VCR display does not operate properly.	• Make sure that the Child-Proof Lock is not engaged. • Safety device in VCR is functioning. *Unplug the VCR and plug it in again after a few hours, and then set the clock. Set the timer again if necessary
• No operation when any button is pressed.	
• VCR does not record	*Cassette's erasure protection tab has been removed. Use a different cassette or place adhesive tape over the tab opening. • Check if a cassette is loaded.
• Cassette is automatically ejected when pressing **REC,** or **TIMER ON/OFF.**	*Cassette's erasure protection tab has been removed. Use a different cassette or place adhesive tape over the tab opening.
• No tape movement.	• Make sure VCR is not in pause/still mode. • Make sure tape has not reached the beginning or end.
• Cassette cannot be loaded	• Make sure there is no other cassette inside. • Make sure the cassette is properly positioned and reinsert
• Picture does not change even though **CHANNEL ▲/▼ (CH ▲/▼)** are pressed.	• Make sure the VCR is not in the timer setting or clock setting mode • Make sure the VCR is not in the channel setting mode.
• Desired channel position cannot be selected.	*The channel has been set to be skipped. Cancel the skip mode for that channel.
NO COLOUR OR POOR PICTURE	
• No colour or poor TV picture on normal viewing.	• Make sure all the cables are connected properly. • Make sure the VCR power cord is properly plugged in.
*Snowy picture appears on TV during playback.	• Adjust **CHANNEL ▲/▼ (CH ▲/▼)** or try a different cassette. • The heads may be dirty from condensed moisture or the magnetic coating of the video tape. (If this is the case, the heads need to be cleaned. Ask the retailer or Sharp approved service centre.)
• No picture appears or colour is not correct during playback.	• Check all connecting cables.
REMOTE CONTROL PROBLEM	
• The VCR cannot be operated by the remote control.	• The remote control unit is too far away from the main unit. • The remote control unit is not pointed correctly at the photoreceptor window. • The batteries are exhausted. • The batteries have not been inserted in the correct direction (+/− polarity).
This unit is equipped with a microprocessor. Its performance could be adversely affected by external electrical noise or interference. If this should happen, unplug the VCR and plug it in again after a few hours.	

SHARP CORPORATION
OF AUSTRALIA PTY. LIMITED
A.C.N. 003 039 405
1 Huntingwood Drive, Huntingwood,
Blacktown, N.S.W. 2148

SHARP CORPORATION
Osaka, Japan

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